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(54) **Title:** ELECTRONIC INTELLECTUAL PROPERTY MANAGEMENT SYSTEM

(57) **Abstract:**

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DECLARATION OF NON-ESTABLISHMENT OF INTERNATIONAL SEARCH REPORT

(PCT Article 17(2)(a), Rules 13ter.1(c) and Rule 39)

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Applicant		
EASTMAN CHEMICAL COMPANY		

This International Searching Authority hereby declares, according to Article 17(2)(a), that **no international search report will be established** on the international application for the reasons indicated below

1. [X] The subject matter of the international application relates to:
   - a. [ ] scientific theories.
   - b. [ ] mathematical theories
   - c. [ ] plant varieties.
   - d. [ ] animal varieties.
   - e. [ ] essentially biological processes for the production of plants and animals, other than microbiological processes and the products of such processes.
   - f. [X] schemes, rules or methods of doing business.
   - g. [ ] schemes, rules or methods of performing purely mental acts.
   - h. [ ] schemes, rules or methods of playing games.
   - i. [ ] methods for treatment of the human body by surgery or therapy.
   - j. [ ] methods for treatment of the animal body by surgery or therapy.
   - k. [ ] diagnostic methods practised on the human or animal body.
   - l. [ ] mere presentations of information.
   - m. [ ] computer programs for which this International Searching Authority is not equipped to search prior art.

2. [ ] The failure of the following parts of the international application to comply with prescribed requirements prevents a meaningful search from being carried out:
   - [ ] the description
   - [ ] the claims
   - [ ] the drawings

3. [ ] The failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions prevents a meaningful search from being carried out:
   - [ ] the written form has not been furnished or does not comply with the standard.
   - [ ] the computer readable form has not been furnished or does not comply with the standard.

4. Further comments:

Name and mailing address of the International Searching Authority	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	M. Rodriguez Nóvoa

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 203

The claims relate to subject matter for which no search is required according to Rule 39 PCT. Given that the claims are formulated in terms of such subject matter or merely specify commonplace features relating to its technological implementation, the search examiner could not establish any technical problem which might potentially have required an inventive step to overcome. Hence it was not possible to carry out a meaningful search into the state of the art (Art. 17(2)(a)(i) and (ii) PCT; see Guidelines Part B Chapter VIII, 1-6).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

action is required during prosecution of each such application. Such a system may expand upon the basic tracking capabilities of a conventional docketing system, but it does not take into considerations other factors that are important to the overall patent process.

It would be desirable to enable various individuals in a business organization whose decisions are at least in part based upon intellectual property considerations to share intellectual property information, collaborate in the creation of inventions and related patent documents, and to streamline the flow of such information from the creation of invention disclosures and other technical documents to the filing and tracking of patent applications. It would further be desirable to relate various types of intellectual property in a manner that enhances its usefulness to such individuals and the business enterprise. The present invention addresses these problems and deficiencies and others in the manner described below.

SUMMARY OF THE INVENTION

In one aspect, the present invention relates to a system, computer-implemented method and computer program product for managing intellectual property-related documents in a business enterprise. Users of the system who have a stake in the intellectual property (stakeholders), such as technologists, attorneys and business managers, can electronically create, store and share the use of documents in a database or similar repository. Documents relating to different types of intellectual property, such as patents, licenses, non-disclosure agreements and trademarks can be linked or grouped together under a common technology to which they relate. A user can thus determine, for example, whether a non-disclosure agreement or a license agreement is in place that relates to the subject matter of a patent application, invention record or technical report the user found in the system.

In another aspect, the present invention relates to processes for protecting proprietary technology of the enterprise with various types of intellectual property, such as patents, licenses, non-disclosure agreements and trademark registrations. Technologists, such as scientists and engineers, can author technical documents such as technical reports and invention disclosures and provide input that can be considered in the decisions whether to seek patent protection, in what countries, how long to maintain an issued patent in force, and other protection-related decisions. Business managers, attorneys and other stakeholders, such as joint venturers and licensees, can similarly provide input into these decisions based upon the same documents because the documents are shared among all stakeholders who are permitted to access to them. In the case of, for example, managers, permission can be controlled to limit a certain manager's access to documents created by technologists who report to that manager.

If an invention is selected for patent protection, an attorney can initiate an automated process of formatting an invention record into a draft patent application. Because the invention record includes information organized into fields such as inventor name and address, title of the invention, summary of the invention, and so forth, the information in these fields can be copied to corresponding fields of a patent application template on a field-by-field basis. Inventor information and the like can be copied into the requisite fields of a declaration, assignment or other formal document that may be required as part of a patent application.

Not only can invention record documents be transformed into patent application documents but, in accordance with still another aspect of the present invention, users (stakeholders) can search for and copy selected information from a document of one type that is stored in the repository to a document of another type. For example, a business manager can copy information from a technical report into a business memorandum or other business document. Types of documents that are stored in the repository can include technical reports, invention records, patent applications and business documents. As noted above, documents of various types that relate to the same technology can be linked together using hypertext or similar linking concepts.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention, as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate one or more embodiments of the invention and, together with the written description, serve to explain the principles of the invention. Wherever possible, the same reference numbers are used throughout the drawings to refer to the same or like elements of an embodiment, and wherein:

Figure 1 illustrates the contribution of input from technologists, business managers and attorneys in processes that affect a set of linked documents relating to

a business enterprise's intellectual property;

Figure 2 illustrates a document conversion process and also illustrates the linking of documents that relate to a common proprietary technology of the business enterprise;

Figure 3 is a block diagram of a computer-based system for sharing and using intellectual property-related documents among technologists, business managers, attorneys and other stakeholders of the underlying proprietary technology;

Figure 4 illustrates the concept underlying the conversion process wherein documents of one type are formatted or structured into documents of another type;

Figure 5A is a flow diagram illustrating a method for using the system;

Figure 5B is another flow diagram illustrating a step of the method in further detail;

Figure 6 illustrates an inventor information screen;

Figure 7 illustrates an inventor desktop screen;

Figure 8 illustrates another inventor desktop screen;

Figure 9 illustrates a search results screen;

Figure 10 illustrates an invention report bibliographic information screen;

Figure 11 illustrates an invention report invention data entry screen;

Figure 12 illustrates an invention report specification data entry screen;

Figure 13 illustrates an attorney desktop screen;

Figure 14 illustrates a "to do" screen;

Figure 15 illustrates a docket number search screen;

Figure 16 illustrates a docket display screen with related filings and activities;

Figure 17 illustrates a graphical view of related dockets screen; and

Figure 18 illustrates a graphical view of related patent application filing screen.

DETAILED DESCRIPTION

The following is a more detailed description of one or more illustrative embodiments of the invention. As demonstrated by the illustrative embodiments, the invention enhances business processes for securing intellectual property rights by implementation of business, legal, marketing, and product strategies as business drivers for managing and filing of intellectual property documents. Selected screen shots capture elements of the modular design, flexibility, and functionality typical of the system as well as the process improvements associated with the application of the methodology employed here.

As illustrated in Fig. 1, in one aspect the invention involves managing intellectual property-related documents 10 and associated assets in a business enterprise in response to the combined input provided by at least the following three types of stakeholders in the assets: technologists 12 such as scientists or engineers; business managers 14; and attorneys 16 such as patent attorneys. Other stakeholders, i.e., individuals or business entities that have an interest in the assets or whose job responsibility involves the assets, may also contribute. As will become more apparent from the descriptions below, the system is invention-driven or technology-driven in the sense that a document describing a proprietary technology becomes the basis for further actions. As used herein, the term "invention" is not intended to imply any legal conclusion but rather refers more generally to a particular proprietary technology or example of technology that is believed to be novel.

As illustrated in Fig. 2, documents 10 include at least the following types: technical reports 18, invention records 20, patent documents 22 including applications and issued patents, and business documents 24. Although these types of documents are well-known to persons involved with technologically-oriented business, the following brief descriptions may be helpful. A technical report is typically a document prepared by a scientist or engineer for use within the enterprise that describes some technology, experiment, process, device or system on which the scientist or engineer worked. An invention record is a more structured document in which such individuals can describe

something that they believe may be potentially patentable. Patent documents include the written text and drawings as well as the formal documents that together comprise a patent application and further include issued patents. Patent documents may also include correspondence to and from a patent office or similar governmental authority. Although not shown for purposes of clarity, other types of intellectual property-related documents 10 can also be included, such as trademark and copyright registrations, non-disclosure agreements and licenses.

As described in further detail below, documents 10 are stored in a manner that makes them electronically accessible to and shareable among stakeholders of the enterprise, such as technologists 12, business managers 14 and attorneys 16. An individual one of documents 10 of one type, such as an invention record 20, can be linked using hypertext or any of a variety of similarly well-known linking concepts commonly used in document search and retrieval systems to individual ones of documents 10 of another type, such as patent documents 22. (In Fig. 2, links are represented by lines between documents 10.) The linking enables, for example, a business manager 14 who is reviewing a business document 24 such as a contract or business plan to follow links to other types of documents 10 that relate to the same technology as that to which the contract, business plan or other business document 24 relates. Similarly, an attorney responsible for a patent application can follow links to related invention records 20, technical reports 18 and business documents 24. As described below in further detail, in certain instances users can convert a document 10 of one type into a document 10 of another type. (This conversion or restructuring process is represented in Fig. 2 by double-headed arrows between groups of documents 10 of different types.) As described below, in some instances the conversion is highly automated and in others it involves more user interaction or manual editing, e.g., a copy-and-paste or a drag-and-drop operation.

A system for achieving the above-described document management is illustrated in Fig. 3. The system or at least portions of it are located within the business enterprise or accessible to stakeholders associated with the enterprise. Exemplary stakeholder

(user) workstations 26, 28, 30 and 32 are coupled via a network connection 34 to a suitable general purpose computer 36 of the type commonly referred to as a server. The repository 38 in which documents 10 (Figs. 1-2) are stored is a relational database, the physical storage medium of which is a hard disk drive 40. Workstations 26, 28, 30 and 32 are suitable computers or terminals that can communicate with computer 36 via network connection 34. Although repository 38 is illustrated as centrally located in this manner, in other embodiments it may be distributed among more than one computer. In this example, workstations 26 and 28 are those of technologists who may, for example, be involved with an invention and are considered inventors. Using workstation 26 or 28, a technologist, who may be working on a technical report, invention disclosure, patent application or other document 10 can access any document 10 in repository 38 to which the technologist has been permitted access. Workstation 30 in this example, is that of a business manager or other person who works for or is associated with the enterprise and contributes decision-making input based upon business strategy, marketing, financial or other considerations well-recognized in the art as business considerations as opposed to technical considerations. Using workstation 30, the manager, who may be reviewing the work of a technologist to determine, for example, whether the enterprise can use a certain technology to its business advantage, can access any document 10 in repository 38 to which the manager is permitted access. Along the same lines, workstation 32 in this example is that of a patent attorney or other attorney who works for the enterprise. Using workstation 32 the attorney can, for example, access technical documents and use them to prepare patent applications, and can manage the prosecution of patent applications and the maintenance of issued patents. Because managers, technologists and attorneys typically work in different physical locations within a business enterprise, workstations 26, 28, 30 and 32 can be located remotely from one another and from computer 36 in any suitable networked manner known in the art. Although four are illustrated for purposes of clarity in this exemplary embodiment, the system can include any suitable number of such workstations.

Computer 36 further includes a suitable processor 42, network interface 44, removable disk drive 46 and main memory 48. Although only these elements are illustrated for purposes of clarity, computer 36 includes other hardware and software elements commonly included in servers, such as other types of memories and an interface for receiving commands from a keyboard and mouse and providing visual output to a video monitor. Processor 42 is illustrated as a single processor for purposes of clarity, but its functions can be distributed among multiple processing devices that may be physically located either together or remotely from one another. Memory 48 is illustrated as a single unit as well, but similarly can be composed of multiple memories of various types. Removable disk drive 46 can be of the type that uses CD-ROM optical disk media (recordable, rewritable or other suitable type), magnetic disk or tape media, or any other suitable type of removable data recording media.

In the illustrated embodiment of the invention, the following software elements are included in the system: one or more formatters 50, one or more search engines 52, one or more report generators 54, one or more document entry systems 56, one or more docketing systems 58, and one or more access control systems 60. Although these software elements are illustrated as residing in memory 48 for illustrative purposes, persons skilled in the art to which the present invention pertains will understand that in actual operation of computer 36 such elements may not actually reside in memory 48 simultaneously or in their entireties. There are also software elements, such as an operating system, that are commonly included in servers but not illustrated in Fig. 3 for purposes of clarity. Such persons will also be readily capable of writing, obtaining from commercial sources, or otherwise providing suitable software code that embodies the requisite software elements of the present invention. Software code may be written in any suitable language, such as VISUAL BASIC FOR APPLICATIONS (VBA), and may incorporate commercially available software elements, such as an ORACLE database from Oracle Corporation, SQL SERVER from Microsoft Corporation, and digital signature tools such as VERISIGN or ENTRUST. The software can include hooks into standard word processing and document creation tools such as

MICROSOFT WORD, WORDPERFECT and spreadsheet tools such as MICROSOFT EXCEL. User interface aspects of the above-described software elements can be graphical in nature and can use web browser and windowing concepts. The code supporting such web-based functions can be written in Extensible Markup Language (XML), Hypertext Markup Language (HTML) and similar languages well-known to persons skilled in the art to which the invention pertains. Any or all of these software elements can be recorded in any suitable combination on a medium readable by removable disk drive 46. In some embodiments, the invention can be characterized as a program product that is recorded on such a medium for commercial use and, when loaded into computer 36 in the conventional manner, enables computer 36 to perform the methods described herein or a subset of them.

In operation, the above-described software elements operate in combination with each other and may be integrated with each other to produce the functions described herein. For example, document entry system 56, which may combine portions of dedicated software code and commercial word-processing tools, enables a user to create, and edit documents 10, store them in repository 38 and retrieve them from repository 38. Access control system 60 limits user access to individual documents 10 based upon authority granted to each user by a superuser of the computer system in essentially the conventional manner. For example, access to an invention record 20 (Fig. 2) created by a certain scientist can be limited to only those managers whose job involves supervising that technologist or involves responsibility for the technology to which that document relates. Search engines 52 enable users to search for particular documents 10 in response to keywords and other search criteria. Such search engines are well-known in the art and commercially available. Search engines 52 may operate in combination with and be integrated with other elements, such as document entry system 56 and formatters 50. In addition to enabling such searching, search engines 52 enable users to traverse from document to document by following links. As well-understood in the art, browsers display hypertext documents in a manner that highlights links on which a user can click using a mouse or similar pointing device

to activate them. Report generators 54 enable users to view and print documents 10 on which the users are working or have found using search engines 52 or other means. Docketing system 58 includes the conventional docketing functions of tracking the status of application preparation, prosecution of pending patent applications and maintenance of issued patents and alerting attorneys or other personnel when an action needs to be taken. It also includes rules-based functions that, as described below in further detail, aid attorneys in structuring and prosecuting patent applications in accordance with the requirements of specific countries. Formatters 50 enable users to perform the document conversion process noted above. For example, a technologist can initiate a process that converts a technical report 18 into an invention record 20. Similarly, an attorney can initiate a process that converts an invention record 20 into a draft patent application. This function of formatter 50 is combined or integrated with docketing system 58 so that an attorney or other user can initiate the process of preparing and filing a patent application. Formatter 50 produces the application itself, while docketing system 58 receives filing date and other docketing-related information from the patent application document and from the attorney. All such software elements can be shared among users of the system and allow users to share access to documents 10 to the extent individual users are granted permission.

Figure 4 illustrates the process of converting one type of document into another type of document in further detail. The conversion involves restructuring or formatting documents on a field-by-field basis, wherein information in a field of a first document is copied into a field of a second document. The field concept in the context of document creation and management is well understood in the art. Fields are, in effect, software structures in which text, drawings or more complex objects can be inserted and then manipulated on a field-by-field basis. Individual fields can be searched, for example, and compared to fields in other documents. Statistics can be gathered by analyzing information in specified fields of a group of documents.

In the illustrated example, a technical report 62 is converted or formatted into an invention record 64, which in turn is later formatted into a patent application 66.

The example assumes that a technologist, such as a scientist, has created technical report 62 by entering a title, a textual description of the technical achievement and an abstract of the description, and that the document was designated as a complete by the person entering a digital signature or similar means. The text in a title field 68 of technical report 62 is copied into a similar title field 70 in invention record 64. The text in abstract field 72 is copied into a similar field 74 in invention record 64. The text in a description field 76 is copied into a similar field 78. The scientist can edit invention record 64 to add information identifying himself as an inventor in an inventor information field 80. The scientist can also add an electronic signature to a field 82 to authenticate himself as the author of the document and designate invention record 64 as complete and thus ready to form the basis for a patent application. Another scientist can add an electronic signature to field 82 or a similar field to authenticate himself as a witness to the invention. Electronic signature technology, typified by commercial examples such as that known as VERISIGN and that known as ENTRUST, is well understood in the art. Note that because scientists and other permitted stakeholders have access to the same documents, two or more scientists can collaborate on the creation of technical report 62 and invention record 64.

Perhaps at a later date, a patent attorney, a business manager and other stakeholders, individually or in concert, review invention record 64 and decide whether to seek patent protection. If patent protection is to be sought, an attorney can initiate the process of converting or formatting invention record 64 into a patent application 66. A patent application typically includes a written specification and one or more formal documents, such as a declaration 84. An assignment document may also be considered part of the application documents. The text in title field 70 is copied into a title field 86 of the written specification and into a field 88 of declaration 84. The text in inventor information field 80 is copied into a field 90 of declaration 84. The text in abstract field 74 is copied into an abstract field 92. The text in description field 78 is copied into a detailed description field 94. The attorney can edit patent application 66 to add text in background, summary, and claims fields 96, 98 and 100, respectively, if such fields do

not exist in the document (e.g., invention record 64) from which patent application 66 is generated. The attorney can edit text in the copied fields to revise what the inventors wrote, if necessary. Although not illustrated, an electronic signature field can be provided for the inventors, attorneys or other stakeholders to indicate that the application is complete (i.e., "sign off" on the application) and ready for filing. If electronic filing is permitted by the patent office or other authority, the system can also file the application. Note that the fields described above are exemplary only, and an application may have more, fewer or other fields, including those in which drawings can be added.

In a similarly automated manner, the system can generate not only such supporting documents that are part of the application itself but also can generate documents to be filed during prosecution and related documents that precede application filing. For example, a boilerplate document for responding to an Office Action issued by a patent office can be automatically generated that identifies the application by title, serial number, inventors and so forth. The system can retrieve the inventor, title and other information needed to complete such documents or boilerplate portions of such documents (i.e., headings, etc.) from appropriate documents stored in the repository.

Patent applications of various types are known, and the required formats for applications may vary from country to country (or region, such as Europe). For example, an application to be filed in the United States may require a slightly different format from an application to be filed in another country or internationally via the Patent Cooperation Treaty filing system. An attorney or other individual charged with preparing and filing a patent application can input the country, region or filing system for which an application is to be prepared. In response, the system automatically adjusts the format to comply with the requirements of that country, region or filing system.

The system can automate the decision of which countries, regions and filing systems for which to prepare patent applications and what type of application to file.

Business enterprises often have pre-defined or default filing strategies. For example, a business decision may be made that absent a specific exception granted by the management of the enterprise, any patent application for an inventions relating to a certain technology is to be filed in a certain group of countries, which may be different from the countries in which applications relating to other technologies are to be filed. Inventors can also provide input because they may be able to identify the countries in which a technology has a market or potential market. Inventors can provide this input directly into invention record 64 at the time they create it and the information is carried through to the application preparation stage. Similarly, the system can determine, for example, that the application to be prepared is a United States provisional application because a business strategy may be that, absent a specifically granted exception, the first application is always to be a United States provisional application.

In addition to business and inventor strategies, there are legal filing considerations. For example, although management may decide to file an application in a certain country, an application may not be considered timely under the applicable laws or rules. One function of docketing system 58 is to apply such rules. In such an instance, the patent application process initiator (defined by the combined functions of formatter 50 and docketing system 58) recognizes that the legal rule, which supersedes business strategy, prevents the desired filing and alerts the attorney, business manager or other stakeholder.

The system incorporates a business rule set, legal rule set, a business filing strategy, and a legal filing strategy for the intellectual property asset herein after referred to as BStrategy and LStrategy, respectively. The BStrategy, which may be derived from issues related to the business of the enterprise such as products, samples, licenses or markets, and the LStrategy act as the process drivers initiating the need for obtaining intellectual property (IPA) asset protection under law and may be based on particular strategies of the business such as market, business, legal, technology or product strategies. The system enables the business enterprise to establish filing strategies related to filing intellectual property documents and technical documents that

reflect the needs and goals for the business apart from the "legal" rule based on the rule of patent law. The LStrategy is coupled to the BStrategy enabling the legal department to establish priorities around filings such as the order to file documents and to complete these filings in the most efficient, timely manner possible. These two strategies are the primary drivers of the process.

The inventor is alerted by electronic mail (e-mail) to the fact that the patent application was filed and can be similarly notified of the progress of the application as it is prosecuted in various countries. Other stakeholders, such as managers, can be similarly kept apprised of the progress or status of patent applications, issued patents, trademark applications and registrations and other intellectual property.

The preparation of multiple patent applications in parallel for filing in multiple countries, regions or filing systems often involves obtaining support documents, such as certified copies of prior applications. In response to initiation of the application process in specified countries the system can compile a checklist of the documents and other items that will be needed to complete the filing in all specified countries. For example, if the system determines that five countries require certified copies of a prior application, the system can notify a paralegal or other personnel that five copies need to be ordered. The system can obtain these items together as a single order rather than separately. This economizes on the time intellectual property staff may spend creating these responses by eliminating the need for the staff to respond individually to each of the five countries.

The rules governing patent application preparation, filing and prosecution can be described and created using activity diagrams written in Unified Modeling Language (UML). A suitable activity processing engine (APE) for creating and executing such UML activity diagram scripts can be included in the patent application control software (e.g., docketing system 58 in Fig. 3). Persons skilled in the art to which the present invention pertains are familiar with UML and can create, obtain from commercial sources or otherwise provide such an engine and integrate it with the software described above. The APE allows a user, such as a patent attorney, to construct a flowchart-like

diagram using building blocks or components represented by graphical icons. Using standard windowing concepts such as the drag-and-drop operation, the user can select from a number of such components that the engine provides and connect them together to define the operations and flow of an activity diagram. As an example of a portion of such an activity diagram, a user could connect an icon representing a "produce patent application cover page" operation to an icon representing an "obtain inventor signatures" operation. When the APE executes this portion of the script, the system would, for example, retrieve the invention title, inventor names and any such information that is normally included in a patent application cover page, generate the cover page document, and then initiate the process of obtaining inventor signatures by, for example, sending an e-mail to them requesting they come to the patent attorney's office to sign the application. Although this is a very straightforward example that is provided only for illustrative purposes, persons skilled in the art will recognize that complex activity diagrams can be provided to govern all stages of the patent application process. Indeed, the same activity diagram concept can be applied to the initiation of other intellectual property activities, including trademark application preparation and prosecution and the preparation of non-disclosure agreements, licenses and other documents. Note that the activity diagram conveys to a permitted stakeholder, such as a business manager, in an intuitive and readily understandable manner how a certain item of intellectual property is processed and managed. For example, a legal assistant might select a "help" menu option on a particular activity or event and, in response, the system would display an activity diagram indicating (e.g., by highlighting one of the icons) the point in the application filing process at which that event or activity is at that time, the next step in the filing process, and/or some educational tips about when, what, or why some activity or event must be completed.

Although not directly related to the application preparation and prosecution steps, at the time inventors create an invention record 64 they can also specify how long they believe an invention will have a market in each country. For example, an inventor may believe that the market for an invention in a certain country or group of countries

will only last five years, the market for the invention in another country or group will last ten years, and no market in any country will last as long as 15 years. This information can be carried through by docketing system 50 to the maintenance fee payment stage. When a maintenance fee is due for an issued patent in some country, the system can determine whether the market is still believed to exist and, if not, cause the maintenance fee to not be paid. This automated maintenance feature can potentially save a business enterprise considerable sums of money if it has a large portfolio of patents in many countries.

Along the same lines as the automated maintenance fee feature, a feature can be included that automates execution of the decision not to pursue a patent application or to expressly abandon an application. How the decision is executed depends upon the status of the application in each country, region or filing system. For example, if the application has not yet been filed in a certain country, region or filing system, an instruction input by an attorney or other permitted stakeholder to abandon an application would supersede or negate any future instruction to initiate preparation of such an application. If an application is already pending in a country in which annuities are paid to maintain an application, such an instruction would cause the system to prevent payment of the next annuity (e.g., by automatically generated correspondence to a foreign associate law firm not to pay the annuity). If at the time the instruction is received a response must be filed to an outstanding action issued by the patent office or other governmental authority before which the application is pending, the system can prevent the response from being filed or generate a notification to an attorney not to prepare such a response. If necessary to achieve abandonment, the system can respond to such an instruction by automatically generating a document to be filed with the patent office or other authority expressly abandoning the application.

In addition to preparing patent application, an attorney or other permitted stakeholder can initiate other intellectual property-related processes under control of the software elements described above. For example, an attorney charged with the enterprise's compliance with environmental laws can initiate a process whereby a

sample of one of the enterprise's product is requested so that it can be tested. Similarly, a business manager may also desire a product sample to provide to a potential customer. If a sample is requested, personnel charged with performing that task can be notified of the request via e-mail. Other intellectual property processes that can be initiated include the preparation of an application to register a trademark or to have a patent or trademark search performed or to have an attorney draft a non-disclosure agreement. If the document is of a type that can be automatically generated, the system does so. If the document or other request is of a type that requires attorney input, the system can notify the attorney via e-mail of the request and direct the attorney to the documents relating to the matter that the attorney may need to review to perform the requested task.

It is contemplated that stakeholders will initiate intellectual property processes in response to viewing documents 10. For example, a business manager may be reviewing patent applications and decide that a trademark is desirable for a certain invention. The manager can initiate the process of ordering a trademark clearance search or preparing an application for registering the trademark. Similarly, the business manager may desire to present the invention to a potential business associate or customer. By performing keyword searches and by following any links that may exist, the manager can use the system to determine if any non-disclosure agreements or other agreements are in place with the potential business associate. If no suitable agreement is in place, the manager can request, for example, that a suitable non-disclosure agreement be prepared. Note that the documents that are generated in response to the request are of a type different from that of the document that motivated the stakeholder to initiate the process. For example, viewing a patent application may motivate one to initiate a trademark application or non-disclosure agreement.

The following summarizes the processes or methods performed by the above-described system. As illustrated in Fig. 5, at step 102 a stakeholder logs in to the system at his workstation and, if such information is not already of record, enters information identifying himself, such as his name, residence address, citizenship and

other personal information. If the information is of record in the system from having been previously entered, the stakeholder may be asked to verify it. For stakeholders who are scientists, engineers or other technologists, the system will automatically retrieve and copy this personal information into invention records and patent applications in which they are named as inventors. At step 104 a technologist can enter a technical document into the system. If the document is an invention record, the information entered can include not only a description of the technical achievement but also information setting forth the countries in which the inventor believes patent protection is desirable and for how long any issued patent should be maintained in each country. Two or more individuals can collaborate in creating the document because documents are shared among all permitted stakeholders. At step 106 inventor and witness signatures can be added to invention disclosures and patent applications. At step 108 a stakeholder can search for and view documents stored in the system. It should be recognized that because these steps can be performed in any suitable order, a stakeholder can search for and view documents at any time. The stakeholder can be a technologist, business manager, attorney or other person employed by or associated with the business enterprise. Searching includes keyword searching as well as navigating linked documents. At step 110 an attorney, business manager or other stakeholder responsible for patent application preparation and prosecution can initiate this task. Note that although patent application preparation and prosecution is shown as an example, other intellectual property-related processes can also be initiated, including trademark application preparation and prosecution, non-disclosure agreement preparation, license agreement preparation, and product sampling. At step 112 the maintenance of issued patents can be controlled. The system dockets maintenance fee due-dates. When a maintenance fee is due in a country, the system can determine whether to pay it, based upon the information provided by the inventor or others regarding the expected useful lifespan of the invention in that country.

Figure 6 illustrates in further detail the process of controlling application preparation and prosecution (step 110). At step 114 an attorney or other stakeholder

initiates the process by, for example, reviewing an invention disclosure document and deciding that a patent application should be filed based upon it. At step 116 the person selects countries (or regions or filing systems) for which applications should be prepared. This selection may be automated entirely or partially in response to business strategies and legal considerations. Decisions regarding the type of application to prepare, such as whether to file a provisional application or regular application, can also be made in response to business strategies and legal considerations. At step 118 the system formats or restructures the invention disclosure to produce the patent applications. Information can be copied on a field-by-field basis in accordance with the laws or rules of each country that regulate the application format. At step 120 an attorney can edit the application to, for example, add claims and any other sections that may be needed. Inventor and attorney signatures can be obtained, in digital signature format if the patent office or other authority accepts such signatures, or in conventional format on a paper ("hard copy") of the application that the system can print. At step 122 the application is filed, either manually by mailing or delivering it in the conventional manner, or automatically if the patent office or other authority permits electronic filing. At step 124 inventors and other stakeholders in the application or technology upon which it is based are notified of the filing via e-mail. The system can similarly notify them of the occurrence of any other step of the process, such as the receipt of a communication from a patent office. At step 126 the system dockets the filing date, computes any due-dates for future actions in each country and performs other conventional docketing functions. This step is also responsive to the receipt of patent office communications that require docketing of a response date during prosecution of each application. As noted above, these steps can be performed in any order. Note, for example, that steps relating to preparation and filing of an application may not be performed within the business enterprise with respect to a certain application or patent because the business enterprise may have acquired the pending patent or issued patent application from another.

As described above, the system has a graphical user interface (GUI) that

operates to facilitate the above-described methods in accordance with conventional windowing concepts familiar to persons skilled in the art to which the invention pertains. In other words, as illustrated in Figs. 6-18, the system displays screens on the users' (stakeholders') workstations in window format. The illustrated screens are intended to serve only as examples to illustrate some of the above-described method steps; the system may display alternative screens and additional screens. Because windowing concepts are well known to persons skilled in the art, the manner in which a user interacts with these screens is not described herein in detail. For example, familiar concepts such as using a mouse or other pointing device to "click on" or activate some graphical element such as a button, tab, scrollbar, checkbox and the like, are not described.

Figure 6 illustrates an inventor information screen that is displayed when a technologist, such as a scientist or engineer, who is likely to be considered an inventor with respect to technical documents he or she may author logs into the system by entering a username and password (not shown). The set of screens that are displayed depends upon what type of stakeholder the user is. For example, a technologist may interact with a different set of screens than an attorney. This aspect of a GUI is sometimes referred to as the desktop or workspace. A technologist interacts with a different desktop or workspace than an attorney. A business manager may interact with yet a still different desktop. With regard to Fig. 6, an attorney may be presented with a different type of initial screen to identify himself or herself, because the information indicated in Fig. 6 is specifically geared toward information that would be needed from an inventor for patent application purposes. Note that after the user has entered the information the system displays a verification window, requesting that the user verify the correctness of the information. As noted above, the inventor information that is entered is used in a number of later steps, including the automated preparation of invention records and patent application documents. Verification ensures that the information is accurate and need not be re-entered at such later steps but rather can be retrieved from storage and relied upon.

Figure 7 illustrates a master-level desktop screen that is displayed for a technologist who is considered an inventor in one or more patent applications. The desktop provides the technologist access to "invention reports" (also referred to as invention records), "dockets," "applications," and invention reports that are "to be witnessed." In response to clicking on any of the items listed under these headings, the system retrieves information pertaining to such items. The user can then work on them, as described below in further detail. To create a new item, such as an invention report, a user can select option "new" (not shown) under the "File" pulldown menu. In response, the system generates a new invention report number and indicates it on the screen.

Figure 8 illustrates a personal workspace screen that can be displayed for a technologist or similar user. The system can be pre-configured in accordance with user preferences to provide this type of desktop instead of that illustrated in Fig. 7. The personal workspace indicates "invention reports," a "global workspace" and a folder labeled "my documents" in a three-pane side-by-side format. Alternatively, the user can configure the panes above or below one another, array them in a cascade, resize them, and manipulate them in any other suitable manner. Note that the global workspace provides access to the work of others, such as the user's colleagues, to the extent the user is permitted such access.

Figure 9 illustrates a screen that the system can display in response to a user clicking on the "global workspace" folder in the screen of Fig. 8, clicking on "invention reports" and then searching for an invention report. A search window (not shown) was displayed in response to clicking on "invention reports," and the system performed a search in response to criteria the user entered, such as keywords. The global workspace menu is displayed in a right-hand pane, and the results of the search are displayed in a left-hand pane.

Figure 10 illustrates a screen that the system can display in response to a user selecting an invention report. This screen allows a user to select "data entry" to enter or review data about the invention report or "invention report" to enter or review the

associated technical write-up. The illustrated screen is the "bibliographic information" screen displayed in response to a user selecting that option under "data entry." In this screen the user can enter inventor names and related personal information, information describing how the invention fits within categories of technology defined by the business enterprise, a title, witness names, dates of invention, and other information along these lines that would conventionally be included in an invention report. The screen also allows the user to associate drawings, photographs, videos, tables and formulae, including complex objects such as chemical structures, with the invention report.

Figure 11 illustrates a screen that is displayed in response to a user selecting the "invention report" option under the "data entry" option of the screen of Fig. 10. A pane on the right-hand side of this screen displays detailed invention data, such as dates of invention, date of first disclosure and other information conventionally included in an invention report. This pane is driven by a word-processing program such as MICROSOFT WORD.

Figure 12 illustrates a screen that is displayed in response to a user selecting the "specification" option under the "data entry" option of the screen of Fig. 10. Each pane on the right-hand side of this screen represents a field of the invention report into which the user can enter text. The upper right-hand pane represents a field for "introduction of the invention." The lower right-hand pane is a field for "technical field of the invention." Other fields include a "detailed description," "suggested claims" and an "abstract." Text entered into each pane becomes associated with a field of the invention report document. As described above, fields are individually addressable by search engines and have other properties that persons skilled in the art commonly associate with electronic documents that are organized in individually manipulable fields.

Figure 13 illustrates an attorney desktop screen. Note that this desktop is different from the inventor desktops described above because attorneys and technologists (inventors) have different needs with regard to tasks they perform and documents they access. As illustrated, an attorney may be presented with a "to do"

icon, a "search" icon, a "pending dockets" icon and icons for various specific dockets, patent applications, and individual documents. Note that although the exemplary desktop focuses upon patents, it is contemplated that the desktop can also include trademarks, agreements and other forms of intellectual property for which the attorney is responsible. In such embodiments of the invention, screens can be provided that graphically illustrate the relationships between different types of intellectual property documents, such as the relationships between a patent, technical report, business document and trademark that all relate to a certain proprietary technology of the enterprise.

Figure 14 illustrates a screen that is displayed for an attorney in response to selecting the "to do" icon. In the illustrated example, the attorney is reminded of a need to validate a granted patent and file a divisional patent application.

Figure 15 illustrates a screen that is displayed for an attorney in response to selecting the "search" icon and then selecting the "docket number" tab. The illustrated screen prompts the attorney to enter a docket number. By selecting other tabs, the attorney can search dockets based upon other criteria.

Figure 16 illustrates a screen that is displayed in response to the attorney selecting the "all dockets" tab shown on the screen of Fig. 15 and then selecting one of the dockets displayed in the left-hand pane. The upper right-hand pane displays patent applications associated with that docket. The lower right-hand pane displays actions that have occurred with respect to the docket, such as the filing of a provisional patent application, filing of an assignment document, receipt of a return postcard, and other actions that commonly occur in the filing and prosecution of a patent application. In response to clicking on any item in the right-hand panes, the system retrieves the related documents or other information on which the attorney may need to work.

Figure 17 illustrates a screen that is displayed in response to the attorney selecting the "related dockets" tab shown on the screen of Fig. 15. The dockets are graphically represented by icons, and relationships between dockets are graphically represented by lines between icons. In response to clicking on a docket icon, the system

retrieves the documents or other information relating to the selected docket.

The screen illustrated in Fig. 18 is similar in appearance to that of Fig. 17 but relates to patent applications instead of dockets. The attorney can reach such a screen by, for example, clicking on a desktop icon representing a patent application. In this screen, the applications are graphically represented by icons and the relationships between patent applications are represented by lines between icons.

The above-described screens are merely examples of GUI screens through which a user can interact with the system to perform the methods described above. Other screens can be provided to accommodate other actions initiated by a user. The design and use of suitable GUI screens is well-within the capabilities of a person skilled in the art to which the present invention relates.

The system is characterized by a modular design for the various intellectual property asset (IPA) entities, a "start anywhere, enter data once" methodology, and the notion that documents (unless scanned in) exist only when a report or document "build operation" is initiated. Together these methodologies allow the a user of the system the flexibility of creating various "documents" from the data that may made up or extracted from a host of starting documents, such as any technical documentation like witnessed notebook records, technical reports, invention document disclosures, or even directly from the application in the absence of a formal invention disclosure.

The above-described embodiment of the present invention illustrates how the invention facilitates the creation, sharing and use of structured intellectual property-related documents within a business enterprise, and how it can provide computer-implemented, highly automated methods for securing intellectual property rights, including creating the appropriate documents for filing in patent offices or other governmental agencies, tracking and docketing actions associated with the prosecution and management of the patents, trademarks or other intellectual property items, and communicating with inventors, business managers, attorneys and other stakeholders and personnel of the business enterprises.

Note that although the above description refers to users of the system who are

stakeholders, such as attorneys, business managers and technologists, users can include staff members of the business enterprise, such as secretaries and paralegals, who interact with the system on behalf of such stakeholders or the enterprise as a whole.

It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the invention being indicated by the following claims.

WHAT IS CLAIMED IS:

1. An intellectual property management system for a business enterprise, comprising:

a computing system having at least one general purpose computer processing unit and a data storage repository and a data communications network, said business enterprise having associated with it technologists, attorneys, and business managers remotely located from one another and to whom said computing system is electronically accessible via network connections, said computing system programmed to include:

an information input system for entry of a technical document authored by a technologist into said computing system, for causing said technical document to be stored in said repository, for entering information for characterizing said technical document, and for entering personal information identifying said technologist, information entered into said technical document being organized in individually manipulable fields;

a document-sharing system enabling stakeholders including permitted ones of said technologists, attorneys and business managers to access, view, edit and create documents stored in said repository;

an access control system for limiting document access, viewing, editing and creation to said permitted ones of said stakeholders;

a patent application control system including a means for designating a technical document as complete and a means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney, said patent application stored in said repository.

2. The system claimed in claim 1, wherein said document-sharing system enables a plurality of technologists to collaborate in creating a document

authored by multiple technologists and to indicate authenticity of said technical document created by said technologists via an electronic signature.

3. The system claimed in claim 1, wherein said document-sharing system enables another technologist to review said document authored by said technologist and to add an indication that said another technologist is a witness to an invention disclosure in said technical document.

4. The system claimed in claim 3, wherein said indication is an electronic signature of said another technologist.

5. The system claimed in claim 1, wherein said access control system permits managers in said business enterprise who are responsible for managing technology developed by said technologist to access and review technical documents in said repository authored by said technologist and does not permit other managers to access and review said technical documents.

6. The system claimed in claim 5, wherein said patent application control system automatically reports to said managers via electronic mail the status of a patent application.

7. The system claimed in claim 5, wherein said patent application control system includes an invention record control system that automatically reports to a stakeholder via electronic mail the status of a technical document.

8. The system claimed in claim 1, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis copies a portion of said personal information identifying said technologist into a field of said patent application identifying an inventor.

9. The system claimed in claim 1, wherein said means for designating a technical document as complete includes an electronic signature of said technologist.

10. The system claimed in claim 1, wherein said means for designating a technical document as complete also deletes earlier versions and revisions of said technical document stored in said repository.

11. The system claimed in claim 1, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney also deletes earlier versions and revisions of said patent application stored in said repository.

12. The system claimed in claim 1, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney produces a patent application including both a specification document including a written invention description and a supporting document including an identification of inventorship.

13. The system claimed in claim 12, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney includes means for said attorney to enter patent claims into said specification document.

14. The system claimed in claim 1, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney includes means for selecting a group of one or more countries in which to file said patent application.

15. The system claimed in claim 1, wherein said patent application control system further comprises means for tracking and controlling pre-application activity in one or more patent offices.

16. The system claimed in claim 1, wherein said patent application control system further comprises means for tracking and controlling post-application activity in one or more patent offices.

17. The system claimed in claim 16, wherein said means for tracking and controlling post-application activity comprises means for selecting a maximum time interval to maintain a patent in each country.

18. The system claimed in claim 1, wherein said patent application control system includes a means for graphically rendering docket relationships.

19. The system claimed in claim 1, wherein said patent application control system includes a means for graphically rendering filing relationships.

20. The system claimed in claim 1, wherein said patent application control system includes means for initiating an intellectual property asset filing in response to a business strategy.

21. The system claimed in claim 1, wherein said patent application control system includes a means for initiating an intellectual property asset filing in response to a legal strategy.

22. The system claimed in claim 1, wherein said patent application control system includes a means for initiating an intellectual property asset filing in response to a marketing strategy.

23. The system claimed in claim 1, wherein said patent application control system includes a means for initiating an intellectual property asset filing in response to a product strategy.

24. The system claimed in claim 1, wherein said patent application control system operates in response to a graphical activity diagram.

25. A computer-implemented method for managing intellectual property for a business enterprise, comprising:

entering into a computer system information relating to a technical document authored by a technologist, said technical document being stored in a repository of said computer system and said information organized in individually manipulable fields, said information including a characterization of said technical document and personal information identifying said technologist;

enabling access, viewing and editing of documents stored in said repository by stakeholders including permitted technologists, attorneys and business managers of said enterprise;

limiting document access, viewing, editing and creation to said permitted ones of said stakeholders; and

controlling patent application processes, including designating a technical document as complete and formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney, said patent application stored in said repository.

26. The method claimed in claim 25, wherein said step of enabling access, viewing and editing of documents stored in said repository by stakeholders enables a plurality of technologists to collaborate in creating a document authored by multiple technologists and to indicate authenticity of said technical document

created by said technologists via an electronic signature.

27. The method claimed in claim 25, wherein said step of enabling access, viewing and editing of documents stored in said repository by stakeholders enables another technologist to review said document authored by said technologist and to add an indication that said another technologist is a witness to an invention disclosure in said technical document.

28. The method claimed in claim 27, wherein said indication is an electronic signature of said another technologist.

29. The method claimed in claim 25, wherein said step of limiting document access, viewing, editing and creation to said permitted ones of said stakeholders permits managers in said business enterprise who are responsible for managing technology developed by said technologist to access and review technical documents in said repository authored by said technologist and does not permit other managers to access and review said technical documents.

30. The method claimed in claim 29, wherein said step of controlling patent application processes automatically reports to said managers via electronic mail the status of a patent application.

31. The method claimed in claim 29, wherein said step of controlling patent application processes automatically reports to a stakeholder via electronic mail the status of a technical document.

32. The method claimed in claim 25, wherein said step of formatting a selected technical document into a selected type of patent application on a field-by-field basis includes copying a portion of said personal information identifying said

technologist into a field of said patent application identifying an inventor.

33. The method claimed in claim 25, wherein said step of designating a technical document as complete includes entering an electronic signature of said technologist.

34. The method claimed in claim 25, wherein said step of designating a technical document as complete also includes deleting earlier versions and revisions of said technical document stored in said repository.

35. The method claimed in claim 25, wherein said step of formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney also includes deleting earlier versions and revisions of said patent application stored in said repository.

36. The method claimed in claim 25, wherein said step of formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney includes producing a patent application including both a specification document including a written invention description and a supporting document including an identification of inventorship.

37. The method claimed in claim 36, wherein said step of formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney includes said attorney entering patent claims into said specification document.

38. The method claimed in claim 25, wherein said step of formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney includes selecting a group

of one or more countries in which to file said patent application.

39. The method claimed in claim 25, wherein said step of controlling patent application processes comprises tracking and controlling pre-application activity in one or more patent offices.

40. The method claimed in claim 25, wherein said step of controlling patent application processes comprises tracking and controlling post-application activity in one or more patent offices.

41. The method claimed in claim 40, wherein said step of tracking and controlling post-application activity comprises selecting a maximum time interval to maintain a patent in each country.

42. The method claimed in claim 25, wherein said step of controlling patent application processes includes graphically rendering docket relationships.

43. The method claimed in claim 25, wherein said step of controlling patent application processes includes graphically rendering filing relationships.

44. The method claimed in claim 25, wherein said step of controlling patent application processes includes initiating an intellectual property asset filing in response to a business strategy.

45. The method claimed in claim 25, wherein said step of controlling patent application processes includes initiating an intellectual property asset filing in response to a legal strategy.

46. The method claimed in claim 25, wherein said step of controlling

patent application processes includes initiating an intellectual property asset filing in response to a marketing strategy.

47. The method claimed in claim 25, wherein said step of controlling patent application processes includes initiating an intellectual property asset filing in response to a product strategy.

48. The method claimed in claim 25, wherein said step of controlling patent application processes is performed in response to a graphical activity diagram.

49. A computer program product for managing intellectual property for a business enterprise, said business enterprise having a computing system with a data storage repository and a data communications network, said business enterprise having associated with it technologists, attorneys, and business managers remotely located from one another and to whom said computing system is electronically accessible via network connections, said computer program product comprising a computer-usable data medium carrying thereon:

an information input system for entry of a technical document authored by a technologist into said computing system, for causing said technical document to be stored in said repository, for entering information for characterizing said technical document, and for entering personal information identifying said technologist, information entered into said technical document being organized in individually manipulable fields;

a document-sharing system enabling stakeholders including permitted ones of said technologists, attorneys and business managers to access, view, edit and create documents stored in said repository;

an access control system for limiting document access, viewing, editing and creation to said permitted ones of said stakeholders;

a patent application control system including a means for designating a technical document as complete and a means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney, said patent application stored in said repository.

50. The computer program product claimed in claim 49, wherein said document-sharing system enables a plurality of technologists to collaborate in creating a document authored by multiple technologists and to indicate authenticity of said technical document created by said technologists via an electronic signature.

51. The computer program product claimed in claim 49, wherein said document-sharing system enables another technologist to review said document authored by said technologist and to add an indication that said another technologist is a witness to an invention disclosure in said technical document.

52. The computer program product claimed in claim 51, wherein said indication is an electronic signature of said another technologist.

53. The computer program product claimed in claim 49, wherein said access control system permits managers in said business enterprise who are responsible for managing technology developed by said technologist to access and review technical documents in said repository authored by said technologist and does not permit other managers to access and review said technical documents.

54. The computer program product claimed in claim 53, wherein said patent application control system automatically reports to said managers via electronic mail the status of a patent application.

55. The computer program product claimed in claim 53, wherein said patent application control system includes an invention record control system that automatically reports to a stakeholder via electronic mail the status of a technical document.

56. The computer program product claimed in claim 49, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis copies a portion of said personal information identifying said technologist into a field of said patent application identifying an inventor.

57. The computer program product claimed in claim 49, wherein said means for designating a technical document as complete includes an electronic signature of said technologist.

58. The computer program product claimed in claim 49, wherein said means for designating a technical document as complete also deletes earlier versions and revisions of said technical document stored in said repository.

59. The computer program product claimed in claim 49, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney also deletes earlier versions and revisions of said patent application stored in said repository.

60. The computer program product claimed in claim 49, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney produces a patent application including both a specification document including a written invention description and a supporting document including an identification

of inventorship.

61. The computer program product claimed in claim 60, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney includes means for said attorney to enter patent claims into said specification document.

62. The computer program product claimed in claim 49, wherein said means for formatting a selected technical document into a selected type of patent application on a field-by-field basis in response to input received from an attorney includes means for selecting a group of one or more countries in which to file said patent application.

63. The computer program product claimed in claim 49, wherein said patent application control system further comprises means for tracking and controlling pre-application activity in one or more patent offices.

64. The computer program product claimed in claim 49, wherein said patent application control system further comprises means for tracking and controlling post-application activity in one or more patent offices.

65. The computer program product claimed in claim 64, wherein said means for tracking and controlling post-application activity comprises means for selecting a maximum time interval to maintain a patent in each country.

66. The computer program product claimed in claim 49, wherein said patent application control system includes a means for graphically rendering docket relationships.

67. The computer program product claimed in claim 49, wherein said patent application control system includes a means for graphically rendering filing relationships.

68. The computer program product claimed in claim 49, wherein said patent application control system includes means for initiating an intellectual property asset filing in response to a business strategy.

69. The computer program product claimed in claim 49, wherein said patent application control system includes a means for initiating an intellectual property asset filing in response to a legal strategy.

70. The computer program product claimed in claim 49, wherein said patent application control system includes a means for initiating an intellectual property asset filing in response to a marketing strategy.

71. The computer program product claimed in claim 49, wherein said patent application control system includes a means for initiating an intellectual property asset filing in response to a product strategy.

72. The computer program product claimed in claim 49, wherein said patent application control system operates in response to a graphical activity diagram.

73. An intellectual property management system for a business enterprise, comprising:

an intellectual property control system including means for tracking status of a process for documenting and securing an intellectual property asset; and

a graphical user interface including display means for electronically displaying an activity diagram representing an intellectual property process, said activity diagram comprising icons representing activities in said process and icons representing process flow between activities, said activity diagram graphically indicating said status of said process.

74. A computer-implemented method for managing intellectual property for a business enterprise, comprising:

electronically tracking status of a process for documenting and securing an intellectual property asset; and

electronically displaying an activity diagram representing an intellectual property process, said activity diagram comprising icons representing activities in said process and icons representing process flow between activities, said activity diagram graphically indicating said status of said process.

75. A computer program product for managing intellectual property for a business enterprise, comprising a computer-usable medium carrying thereon:

an intellectual property control system including means for tracking status of a process for documenting and securing an intellectual property asset; and

a graphical user interface including display means for electronically displaying an activity diagram representing an intellectual property process, said activity diagram comprising icons representing activities in said process and icons representing process flow between activities, said activity diagram graphically indicating said status of said process.

76. An intellectual property management system for a business enterprise, comprising:

a graphical user interface including engine means for electronically constructing an activity diagram in response to user input, said activity diagram

representing an intellectual property process and comprising icons representing activities in said process and icons representing process flow between activities, a sequence of said activities defining a process for securing an intellectual property asset through a governmental intellectual property agency; and

an intellectual property control system including process means for executing said activity diagram and sequentially initiating actions directed to said governmental intellectual property agency in accordance with said process flow, each action corresponding to an activity in said activity diagram.

77. A method for managing intellectual property for a business enterprise, comprising:

electronically constructing an activity diagram in response to user input, said activity diagram representing an intellectual property process and comprising icons representing activities in said process and icons representing process flow between activities, a sequence of said activities defining a process for securing an intellectual property asset through a governmental intellectual property agency; and

executing said activity diagram and sequentially initiating actions directed to said governmental intellectual property agency in accordance with said process flow, each action corresponding to an activity in said activity diagram.

78. A computer program product for managing intellectual property for a business enterprise, comprising a computer-usable data medium carrying thereon:

a graphical user interface including engine means for electronically constructing an activity diagram in response to user input, said activity diagram representing an intellectual property process and comprising icons representing activities in said process and icons representing process flow between activities, a sequence of said activities defining a process for securing an intellectual property asset through a governmental intellectual property agency; and

an intellectual property control system including process means for executing

said activity diagram and sequentially initiating actions directed to said governmental intellectual property agency in accordance with said process flow, each action corresponding to an activity in said activity diagram.

79. An intellectual property management system for a business enterprise, comprising:

a computing system having at least one general purpose computer processing unit and a data storage repository, a plurality of documents storable in said repository, said documents including technical reports, invention records, patent applications and business documents, information in invention records and patent applications being organized in individually searchable and manipulable fields, said computing system programmed to include:

a document reviewing system enabling a user to search fields of documents stored in said repository and to read and edit documents stored in said repository; and

a document formatting system for, under control of said user, copying at least information in a field of a selected document of a type from the group of types consisting of technical reports, invention records, patent applications and business documents into another document of another one of said types.

80. The system claimed in claim 79, wherein said document reviewing system includes a document formatting system for formatting an invention record into a selected type of patent application on a field-by-field basis in response to input received from an attorney.

81. The system claimed in claim 79, wherein said document reviewing system enables only permitted ones of said technologists, attorneys and business managers to access and view documents stored in said repository.

82. The system claimed in claim 79, wherein said document reviewing system includes a document sharing system enabling an individual to review a document authored by another individual and to add an indication that said another individual is a witness to an invention record authored by said individual.

83. The system claimed in claim 82, wherein said indication is an electronic signature.

84. The system claimed in claim 79, further comprising an access control system permitting managers in said business enterprise who are responsible for managing technology developed by an author of an invention record to access and review invention records in said repository authored by said author and does not permit other managers to access and review said invention records.

85. A computer-implemented method for managing intellectual property for a business enterprise, said enterprise having a computing system with a data storage repository in which a plurality of documents are storable, said documents including technical reports, invention records, patent applications and business documents, information in invention records and patent applications being organized in individually searchable and manipulable fields, the method comprising:

searching, viewing and editing, under control of a user, fields of documents stored in said repository; and

copying, under control of a user, at least information in a field of a selected document of a type from the group of types consisting of technical reports, invention records, patent applications and business documents into another document of another one of said types.

86. The method claimed in claim 85, wherein said searching, viewing

and editing step includes automatically formatting an invention record into a selected type of patent application on a field-by-field basis in response to input received from an attorney.

87. The method claimed in claim 85, wherein said searching, viewing and editing step includes enabling only permitted ones of said technologists, attorneys and business managers to access and view documents stored in said repository.

88. The method claimed in claim 85, wherein said searching, viewing and editing step includes enabling an individual to review a document authored by another individual and to add an indication that said another individual is a witness to an invention record authored by said individual.

89. The method claimed in claim 88, wherein said indication is an electronic signature.

90. The method claimed in claim 85, further comprising the step of permitting managers in said business enterprise who are responsible for managing technology developed by an author of an invention record to access and review invention records in said repository authored by said author and not permitting other managers to access and review said invention records.

91. A computer program product for managing intellectual property for a business enterprise, said business enterprise having a computing system with a repository in which a plurality of documents are storable, said program product comprising a computer-usable data medium carrying thereon:

a document reviewing system enabling a user to search fields of documents stored in said repository and to read and edit documents stored in said repository;

and

a document formatting system for, under control of said user, copying at least information in a field of a selected document of a type from the group of types consisting of technical reports, invention records, patent applications and business documents into another document of another one of said types.

92. The computer program product claimed in claim 91, wherein said document reviewing system includes a document formatting system for formatting an invention record into a selected type of patent application on a field-by-field basis in response to input received from an attorney.

93. The computer program product claimed in claim 91, wherein said document reviewing system enables only permitted ones of said technologists, attorneys and business managers to access and view documents stored in said repository.

94. The computer program product claimed in claim 91, wherein said document reviewing system includes a document sharing system enabling an individual to review a document authored by another individual and to add an indication that said another individual is a witness to an invention record authored by said individual.

95. The computer program product claimed in claim 94, wherein said indication is an electronic signature.

96. The computer program product claimed in claim 91, further comprising an access control system permitting managers in said business enterprise who are responsible for managing technology developed by an author of an invention record to access and review invention records in said repository authored

by said author and does not permit other managers to access and review said invention records.

97. An intellectual property management system for a business enterprise, comprising:

a computing system having at least one general purpose computer processing unit and a data storage repository, a plurality of documents storable in said repository, each document relating to intellectual property of one of a plurality of intellectual property types, said computing system programmed to include:

a document reviewing system enabling a user to search fields of documents stored in said repository and to select, read and edit documents stored in said repository; and

an intellectual property process initiator operable in response to user input and a user-selected document to initiate an intellectual property process relating to a user-selected intellectual property type, said intellectual property process selected by said user being of an intellectual property type different from that of said user-selected document.

98. The system claimed in claim 97, wherein:

said computing system is further programmed to include a link between an indication of a proprietary technology of said business enterprise protectible by at least one of said intellectual property types and each document stored in said repository relating to said proprietary technology; and

said document reviewing system provides a user-perceptible indication of said link relating a document to a proprietary technology.

99. The system claimed in claim 97, wherein said intellectual property types consist of: inventions and licenses.

100. The system claimed in claim 97, wherein said intellectual property types consist of: inventions and non-disclosure agreements.

101. The system claimed in claim 97, wherein said intellectual property types consist of: inventions and trademarks.

102. The system claimed in claim 97, wherein said intellectual property types consist of: inventions, trademarks, non-disclosure agreements and licenses.

103. The system claimed in claim 97, wherein said intellectual property process initiator initiates preparation of a patent application in a plurality of user-selected countries, determines in response to laws of each country a total count of each type of item needed to file an application in all said countries.

104. A computer-implemented method for managing intellectual property for a business enterprise, said enterprise having a computing system with a repository in which is storable a plurality of documents, each document relating to intellectual property of one of a plurality of intellectual property types, the method comprising:

enabling a user to search, read and edit fields of documents stored in said repository; and

initiating an intellectual property process in response to user input and a user-selected document, said process relating to a user-selected intellectual property type, said intellectual property process selected by said user being of an intellectual property type different from that of said user-selected document.

105. The method claimed in claim 104, further comprising providing a user-perceptible indication of a link relating a document to a proprietary technology, links existing between an indication of a proprietary technology of said business

enterprise protectible by at least one of said intellectual property types and each document stored in said repository relating to said proprietary technology.

106. The method claimed in claim 104, wherein said intellectual property types consist of: inventions and licenses.

107. The method claimed in claim 104, wherein said intellectual property types consist of: inventions and non-disclosure agreements.

108. The method claimed in claim 104, wherein said intellectual property types consist of: inventions and trademarks.

109. The method claimed in claim 104, wherein said intellectual property types consist of: inventions, trademarks, non-disclosure agreements and licenses.

110. The method claimed in claim 104, wherein said initiating step includes initiating preparation of a patent application in a plurality of user-selected countries, and determining in response to laws of each country a total count of each type of item needed to file an application in all said countries.

111. A computer program product for managing intellectual property for a business enterprise, said enterprise having a computing system with a repository in which is storable a plurality of documents, each document relating to intellectual property of one of a plurality of intellectual property types, said computer program product comprising a computer-usable data medium carrying thereon:

a document reviewing system enabling a user to search fields of documents stored in said repository and to select, read and edit documents stored in said repository; and

an intellectual property process initiator operable in response to user input

and a user-selected document to initiate an intellectual property process relating to a user-selected intellectual property type, said intellectual property process selected by said user being of an intellectual property type different from that of said user-selected document.

112. The computer program product claimed in claim 111, wherein:

said computing system is further programmed to include a link between an indication of a proprietary technology of said business enterprise protectible by at least one of said intellectual property types and each document stored in said repository relating to said proprietary technology; and

said document reviewing system provides a user-perceptible indication of said link relating a document to a proprietary technology.

113. The computer program product claimed in claim 112, wherein said intellectual property types consist of: inventions and licenses.

114. The computer program product claimed in claim 112, wherein said intellectual property types consist of: inventions and non-disclosure agreements.

115. The computer program product claimed in claim 112, wherein said intellectual property types consist of: inventions and trademarks.

116. The computer program product claimed in claim 112, wherein said intellectual property types consist of: inventions, trademarks, non-disclosure agreements and licenses.

117. The computer program product claimed in claim 112, wherein said intellectual property process initiator initiates preparation of a patent application in a plurality of user-selected countries, determines in response to laws of each country a

total count of each type of item needed to file an application in all said countries.

118. An intellectual property management system for a business enterprise, comprising:

a computing system having at least one general purpose computer processing unit and a data storage repository, a plurality of documents storable in said repository, each document relating to intellectual property of one of a plurality of intellectual property types, said computing system programmed to include:

a patent application control system including a means for initiating preparation of a plurality of patent applications in response to business input, legal input, and technical input, said technical input associated with a technology, said business input defining a plurality of country groups in which to file an application relating to said technology, said legal input defining a subset of said country groups in which filing is legally possible at the time application preparation is initiated; and

said system generating at least a portion of each of said plurality of patent applications for which filing is legally possible.

119. A computer-implemented method for managing intellectual property for a business enterprise, said enterprise having a computing system with a data storage repository in which a plurality of documents is storable, each document relating to intellectual property of one of a plurality of intellectual property types, the method comprising:

initiating preparation of a plurality of patent applications in response to business input, legal input, and technical input, said technical input associated with a technology, said business input defining a plurality of country groups in which to file an application relating to said technology, said legal input defining a subset of said country groups in which filing is legally possible at the time application preparation is initiated; and

generating at least a portion of each of said plurality of patent applications for which filing is legally possible.

120. A computer program product for managing intellectual property for a business enterprise, said enterprise having a computing system with a data storage repository in which a plurality of documents is storable, each document relating to intellectual property of one of a plurality of intellectual property types, the computer program product comprising a computer-usable data medium carrying thereon:

a computing system having at least one general purpose computer processing unit and a data storage repository, a plurality of documents storable in said repository, each document relating to intellectual property of one of a plurality of intellectual property types, said computing system programmed to include:

a patent application control system including a means for initiating preparation of a plurality of patent applications in response to business input, legal input, and technical input, said technical input associated with a technology, said business input defining a plurality of country groups in which to file an application relating to said technology, said legal input defining a subset of said country groups in which filing is legally possible at the time application preparation is initiated; and

said system generating at least a portion of each of said plurality of patent applications for which filing is legally possible.

121. An intellectual property management system for a business enterprise, comprising:

a computing system having at least one general purpose computer processing unit and a data storage repository, a plurality of documents storable in said repository, each document relating to intellectual property of one of a plurality of intellectual property types, said computing system programmed to include:

a patent application control system including maintenance means for

controlling maintenance of an issued patent in each of a plurality of countries, said maintenance means receiving a maintenance strategy defining the length of time said patent is to be maintained in each country;

said maintenance means docketing maintenance fee due-dates in each country and responding to a notification of a maintenance fee coming due in said country by causing said maintenance fee not to be timely paid if said length of time said patent is to be maintained in said country has elapsed.

122. A computer-implemented method for managing intellectual property for a business enterprise, said enterprise having a computing system with a data storage repository in which a plurality of documents is storable, each document relating to intellectual property of one of a plurality of intellectual property types, the method comprising:

controlling maintenance of an issued patent in each of a plurality of countries, said maintenance means receiving a maintenance strategy defining the length of time said patent is to be maintained in each country;

docketing maintenance fee due-dates in each country; and

responding to a notification of a maintenance fee coming due in said country by electronically causing said maintenance fee not to be timely paid if said length of time said patent is to be maintained in said country has elapsed.

123. A computer program product for managing intellectual property for a business enterprise, said enterprise having a computing system with a data storage repository in which a plurality of documents is storable, each document relating to intellectual property of one of a plurality of intellectual property types, the program product comprising:

a patent application control system including maintenance means for controlling maintenance of an issued patent in each of a plurality of countries, said maintenance means receiving a maintenance strategy defining the length of time said

patent is to be maintained in each country;

said maintenance means docketing maintenance fee due-dates in each country and responding to a notification of a maintenance fee coming due in said country by causing said maintenance fee not to be timely paid if said length of time said patent is to be maintained in said country has elapsed.

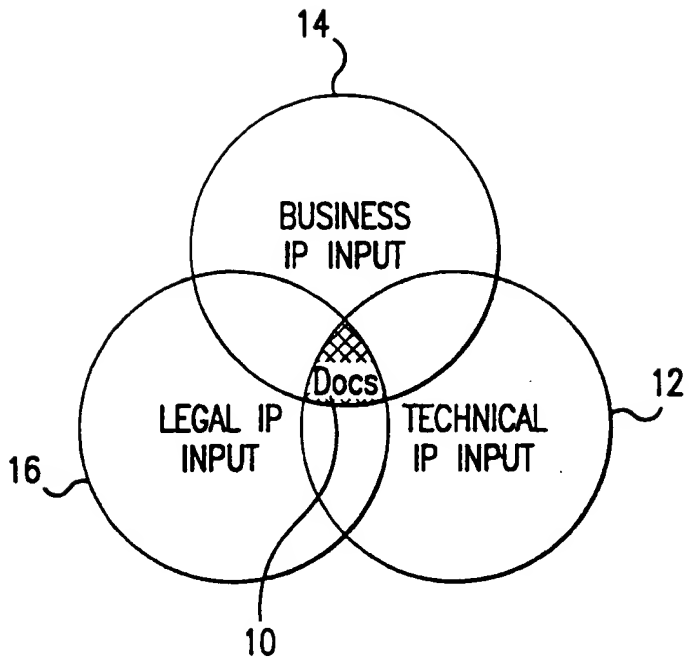

14
BUSINESS
IP INPUT
Docs
LEGAL IP
INPUT
TECHNICAL
IP INPUT
12
16
10

FIG.1

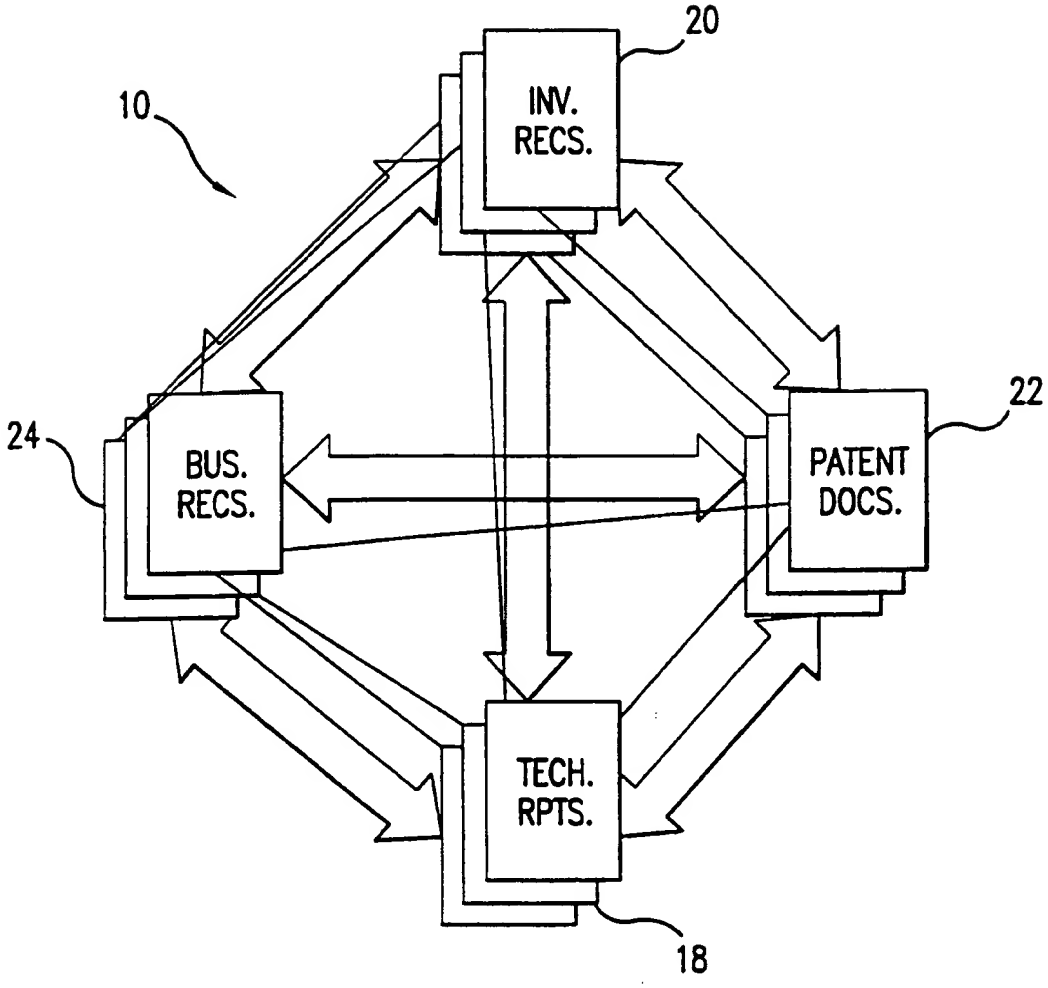


FIG.2

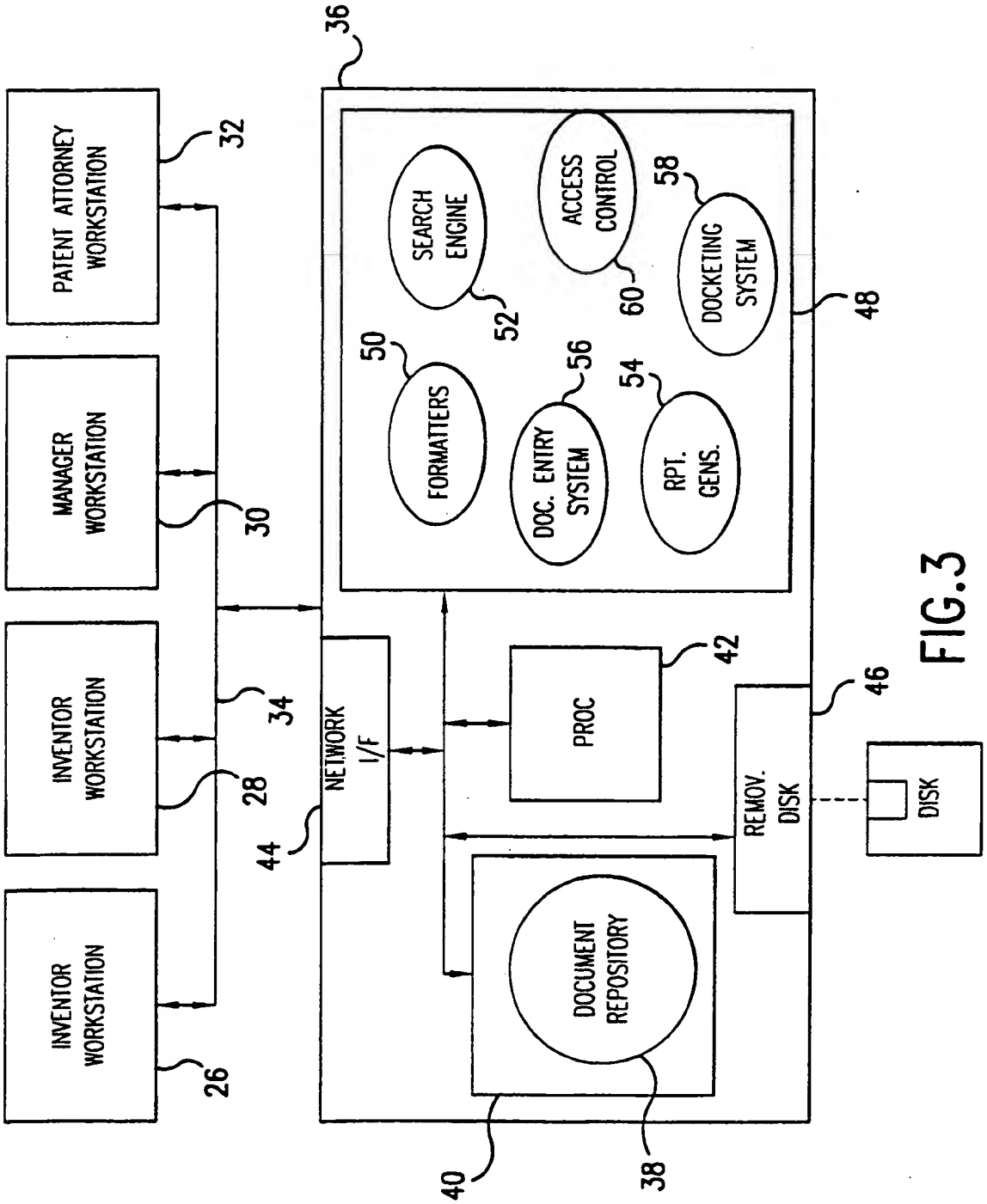

PATENT ATTORNEY WORKSTATION
32
MANAGER WORKSTATION
30
INVENTOR WORKSTATION
34
INVENTOR WORKSTATION
28
INVENTOR WORKSTATION
26
36
SEARCH ENGINE
52
ACCESS CONTROL
60
58
DOCKETING SYSTEM
48
50
FORMATTERS
56
DOC. ENTRY SYSTEM
54
RPT. GENS.
NETWORK I/F
44
PROC
42
REMOV. DISK
46
DISK
DOCUMENT REPOSITORY
40
38

FIG.3

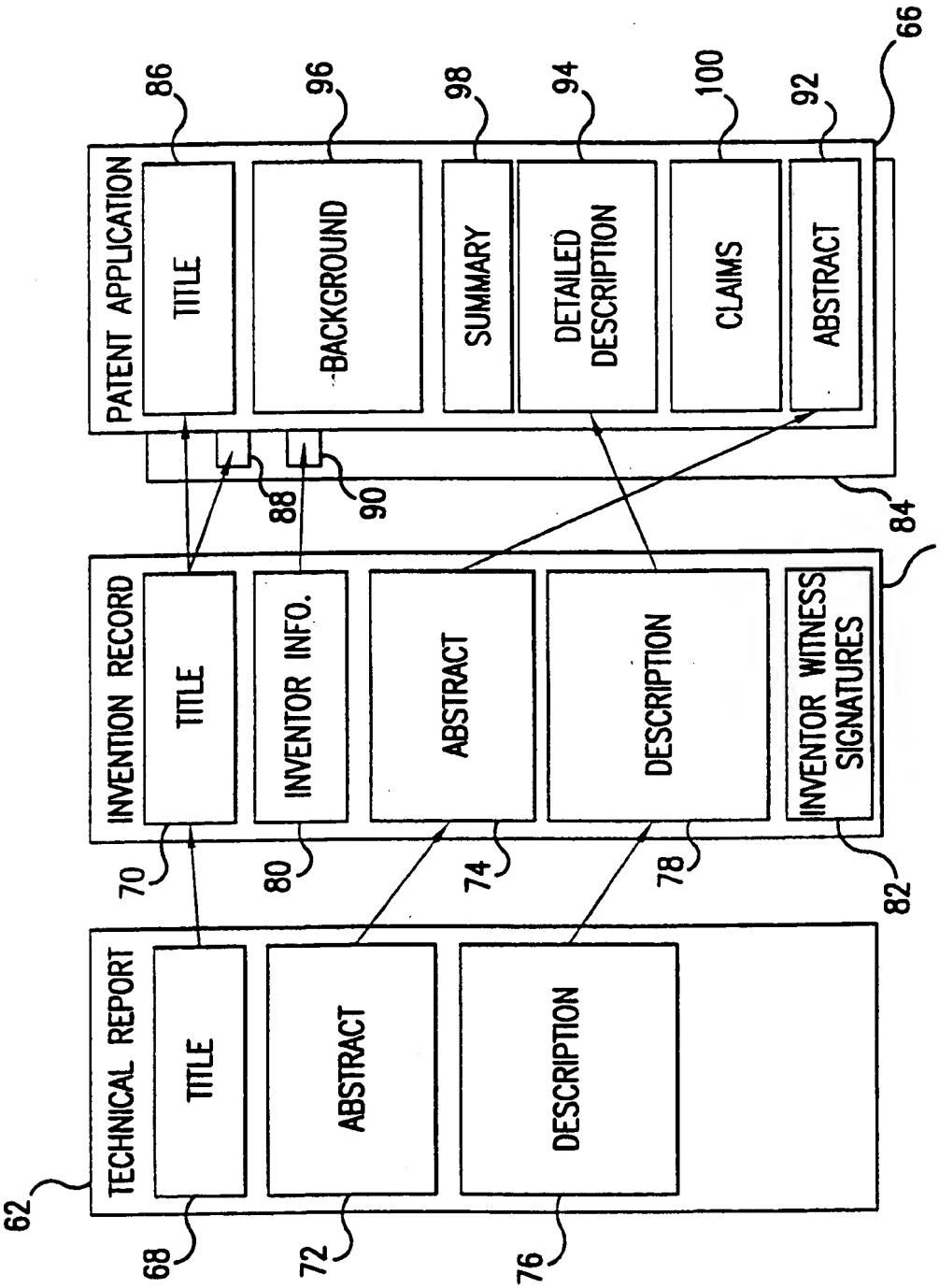


FIG.4

4/4/05, EAST Version: 2.0.1.4

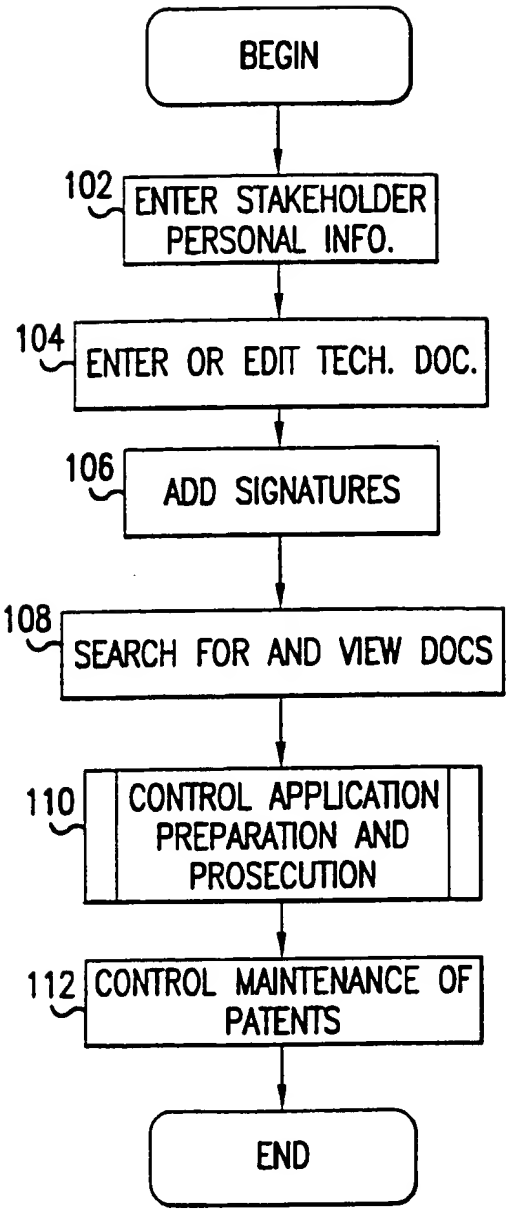

BEGIN
102
ENTER STAKEHOLDER PERSONAL INFO.
104
ENTER OR EDIT TECH. DOC.
106
ADD SIGNATURES
108
SEARCH FOR AND VIEW DOCS
110
CONTROL APPLICATION PREPARATION AND PROSECUTION
112
CONTROL MAINTENANCE OF PATENTS
END

FIG. 5A

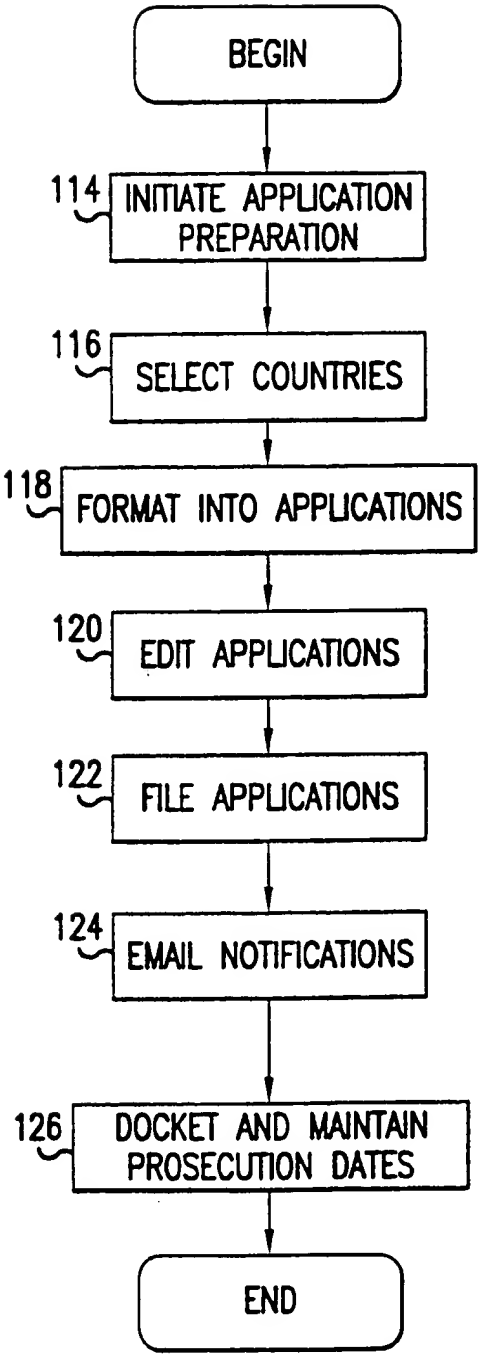

BEGIN
114
INITIATE APPLICATION PREPARATION
116
SELECT COUNTRIES
118
FORMAT INTO APPLICATIONS
120
EDIT APPLICATIONS
122
FILE APPLICATIONS
124
EMAIL NOTIFICATIONS
126
DOCKET AND MAINTAIN PROSECUTION DATES
END

FIG. 5B

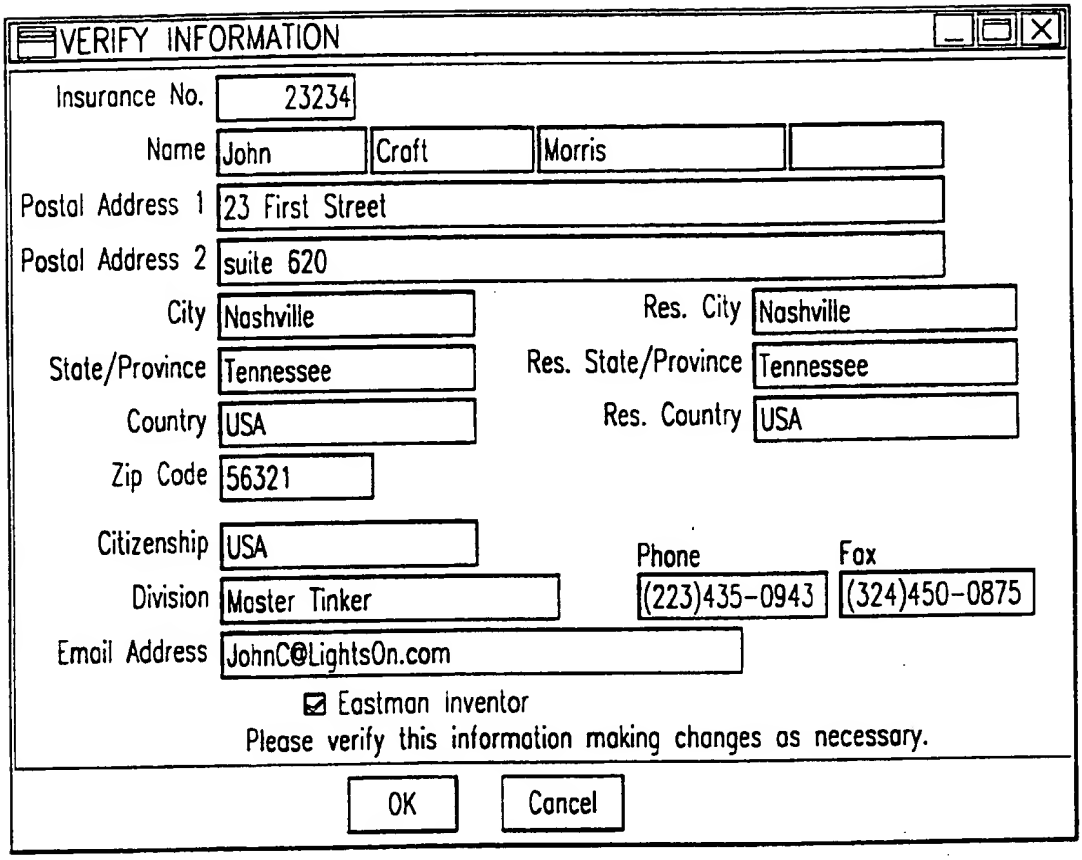

VERIFY INFORMATION
Insurance No. 23234
Name John Craft Morris
Postal Address 1 23 First Street
Postal Address 2 suite 620
City Nashville
Res. City Nashville
State/Province Tennessee
Res. State/Province Tennessee
Country USA
Res. Country USA
Zip Code 56321
Citizenship USA
Phone
Fax
Division Master Tinker
(223)435-0943
(324)450-0875
Email Address JohnC@LightsOn.com
Eastman Inventor
Please verify this information making changes as necessary.
OK
Cancel

FIG. 6A

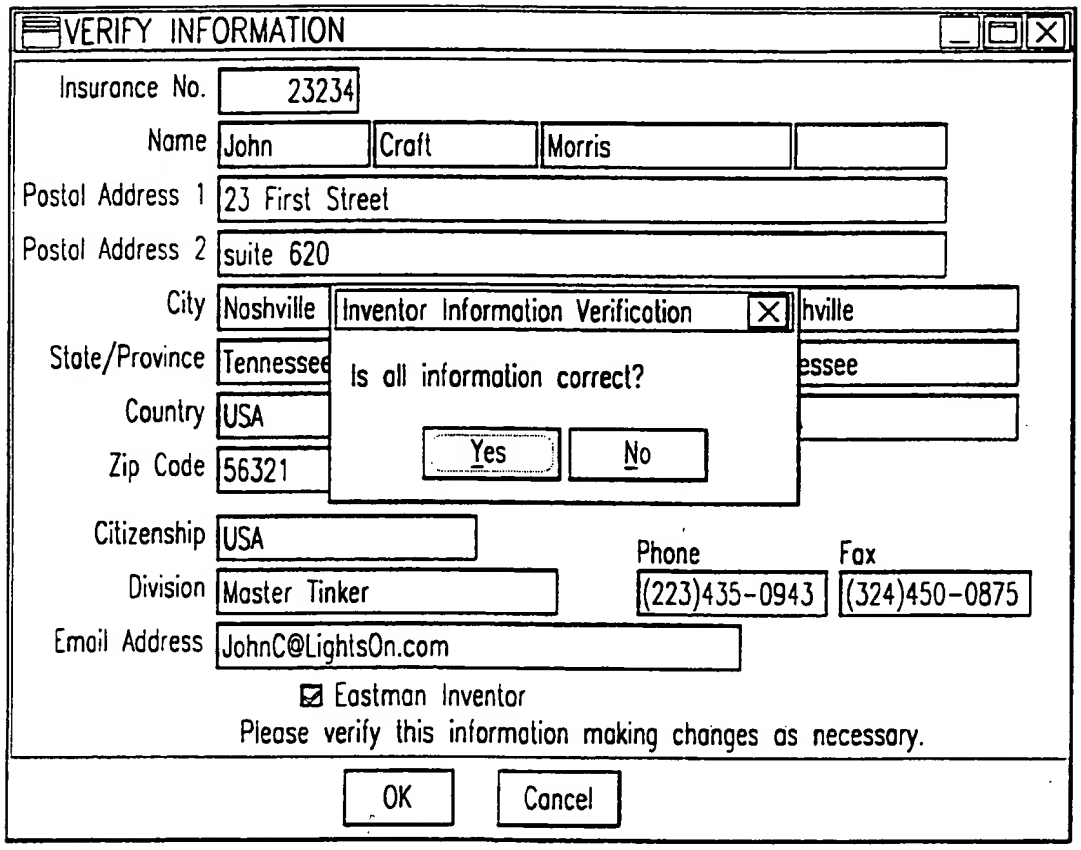
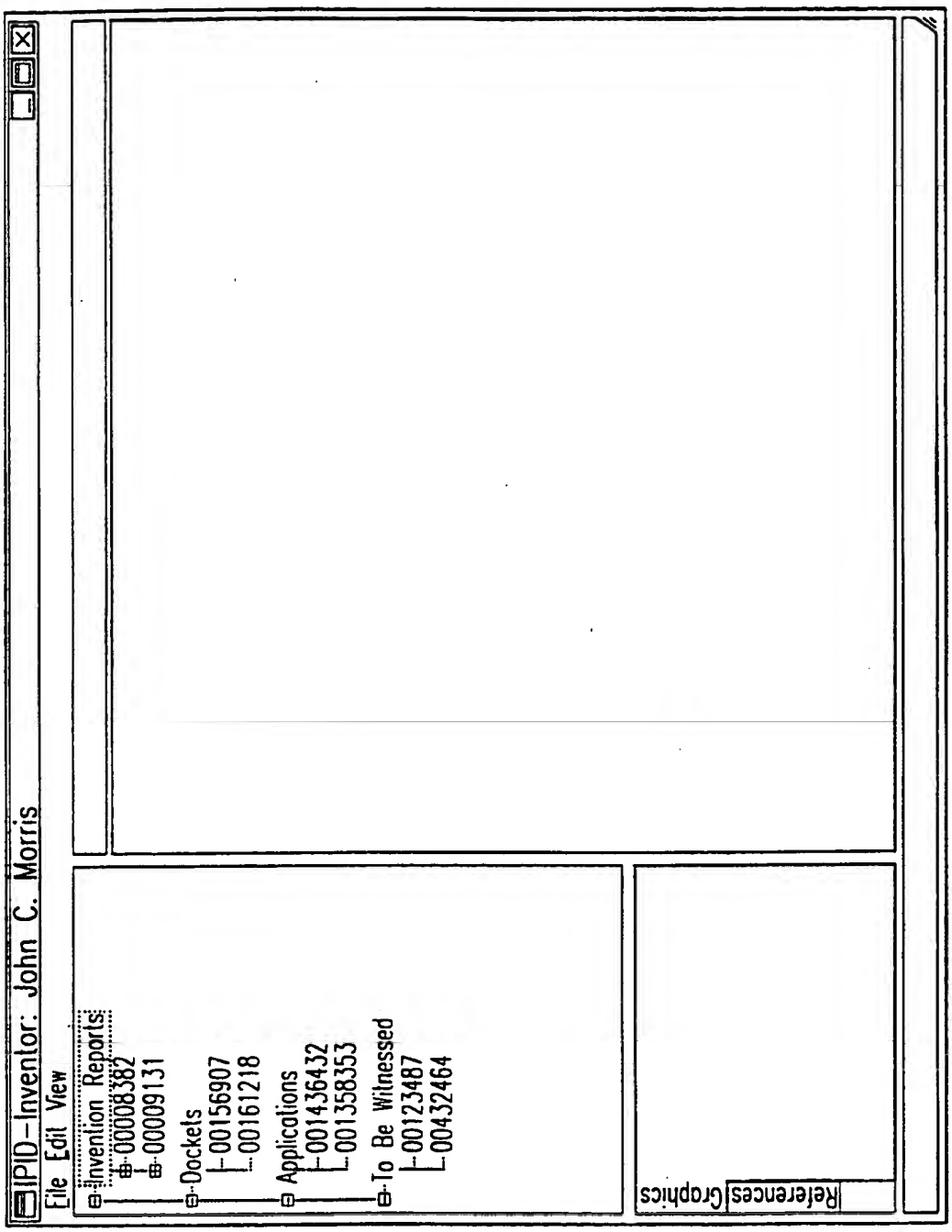


FIG.6B

4/4/05, EAST Version: 2.0.1.4


IPID-Inventor: John C. Morris
File Edit View
Invention Reports:
00008382
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Dockets
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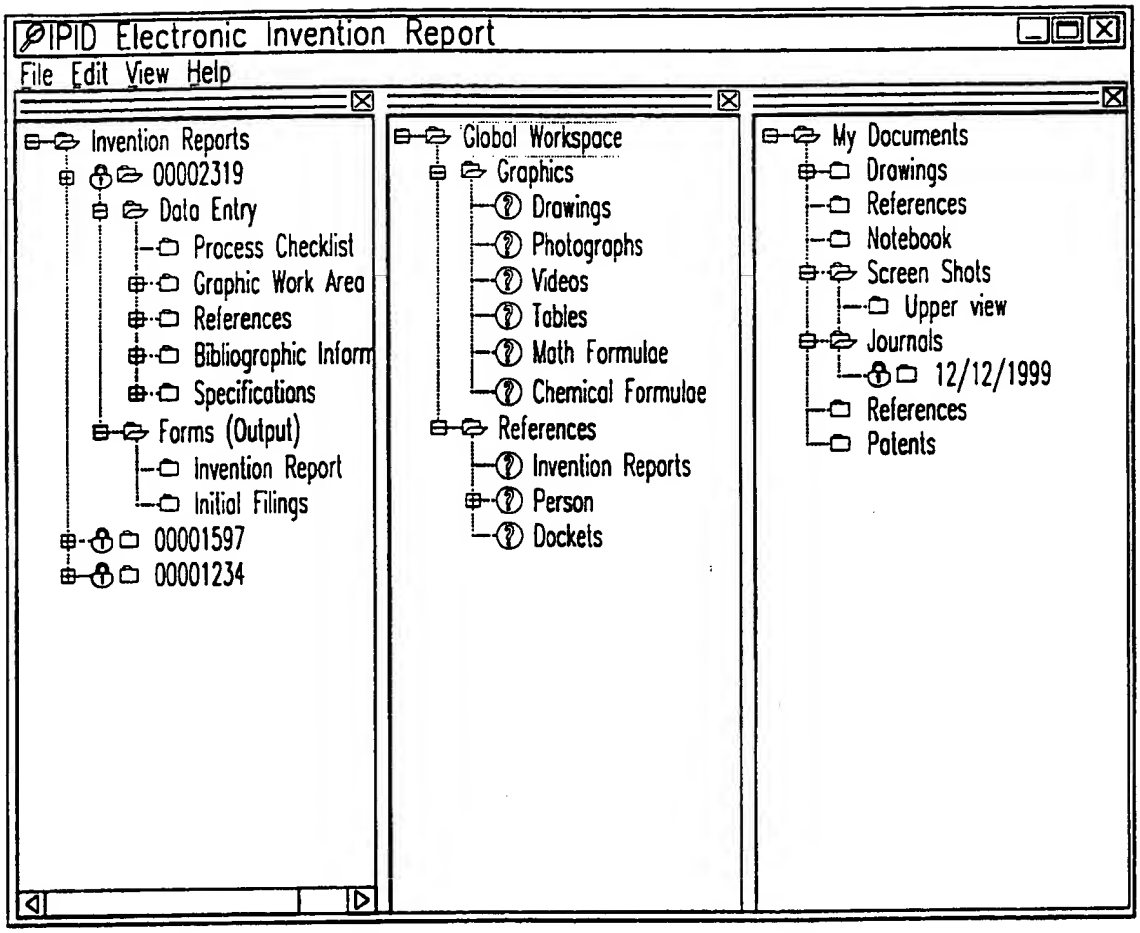
00161218
Applications
001436432
001358353
To Be Witnessed
00123487
00432464
References
Graphics

FIG.7


IPID Electronic Invention Report
File Edit View Help
Invention Reports
00002319
Data Entry
Process Checklist
Graphic Work Area
References
Bibliographic Inform
Specifications
Forms (Output)
Invention Report
Initial Filings
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00001234
Global Workspace
Graphics
Drawings
Photographs
Videos
Tables
Math Formulae
Chemical Formulae
References
Invention Reports
Person
Dockets
My Documents
Drawings
References
Notebook
Screen Shots
Upper view
Journals
12/12/1999
References
Patents

FIG.8

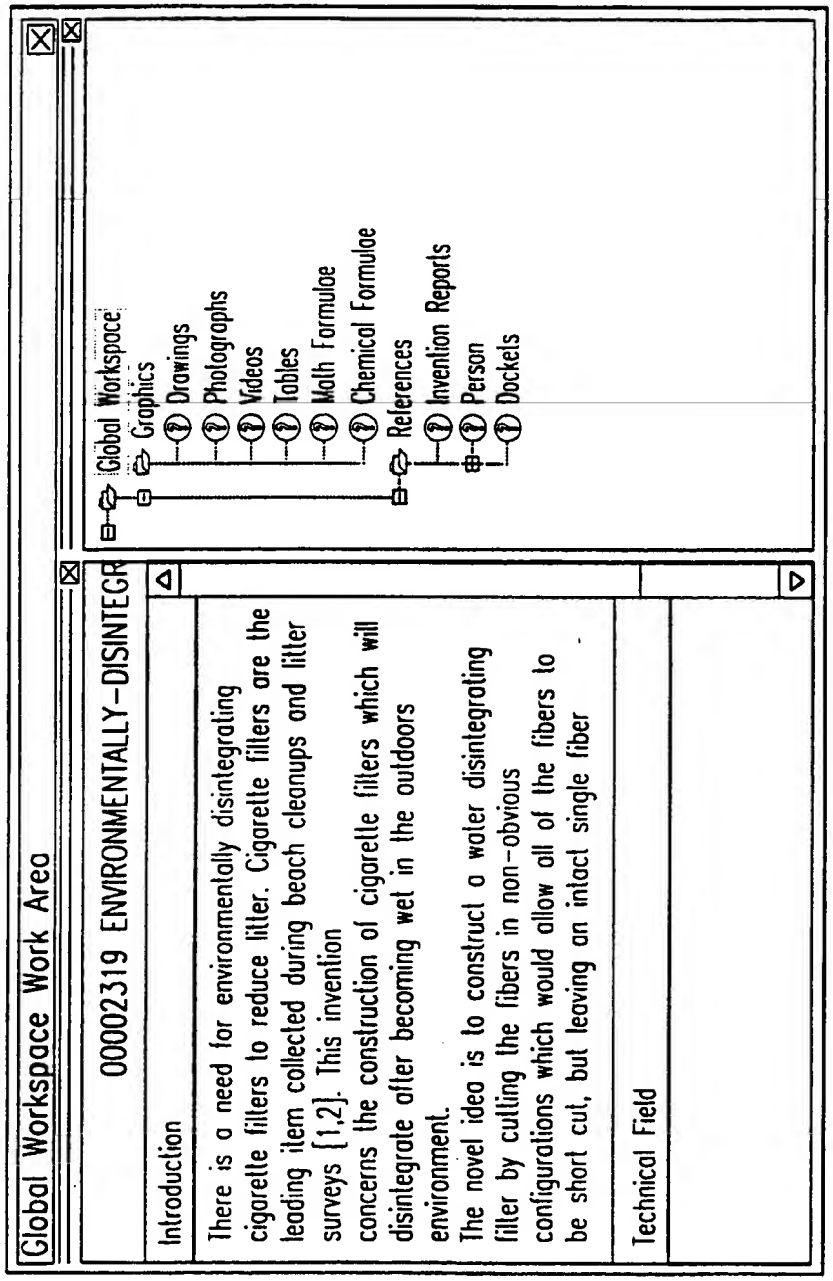

FIG.9

4/4/05, EAST Version: 2.0.1.4

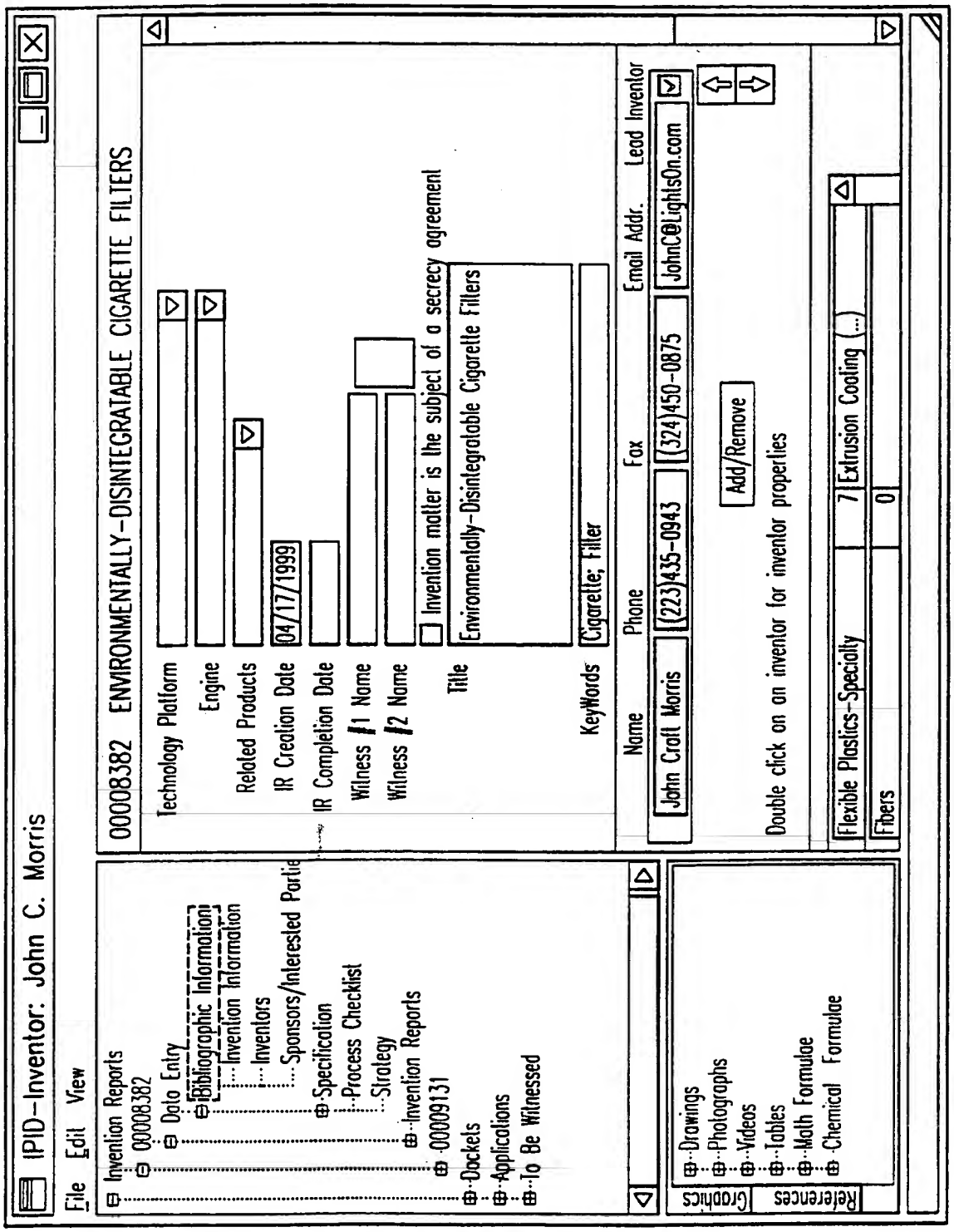

FIG.10

4/4/05, EAST Version: 2.0.1.4

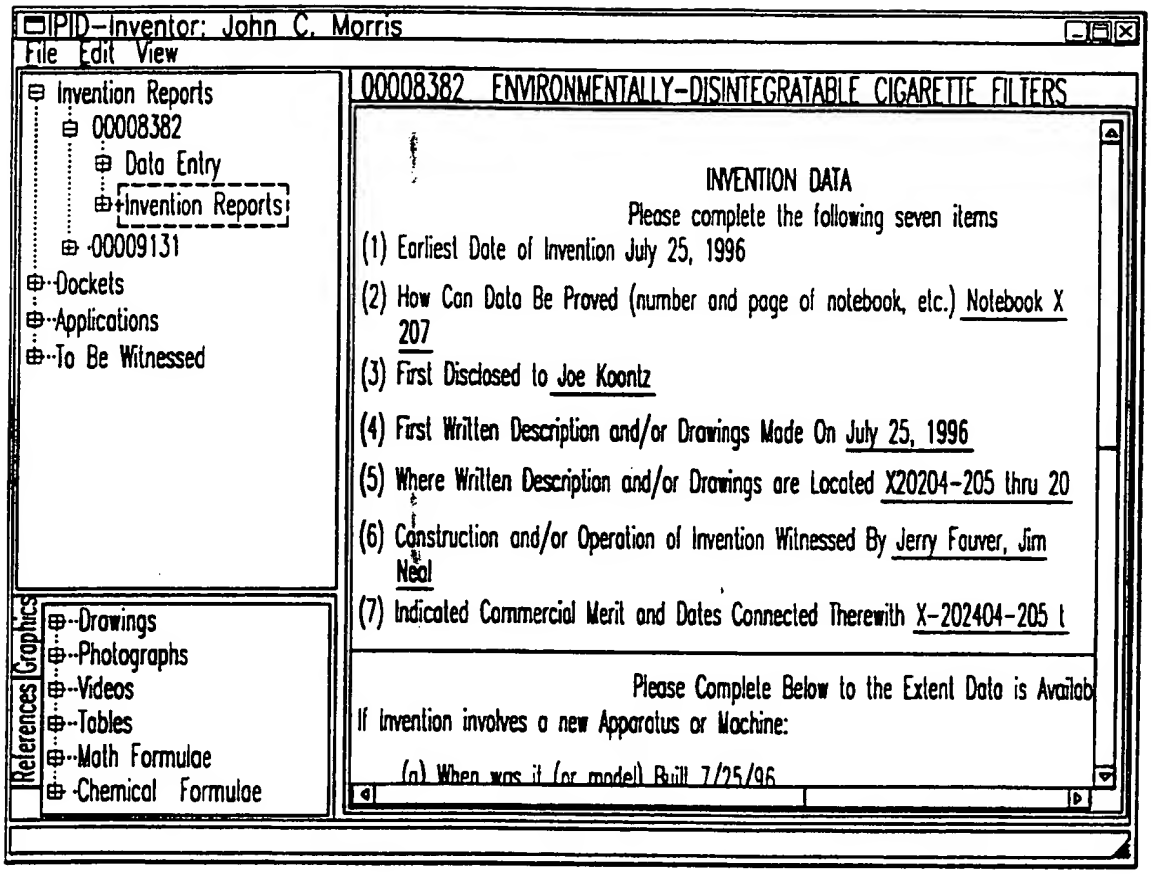

FIG.11

4/4/05, EAST Version: 2.0.1.4

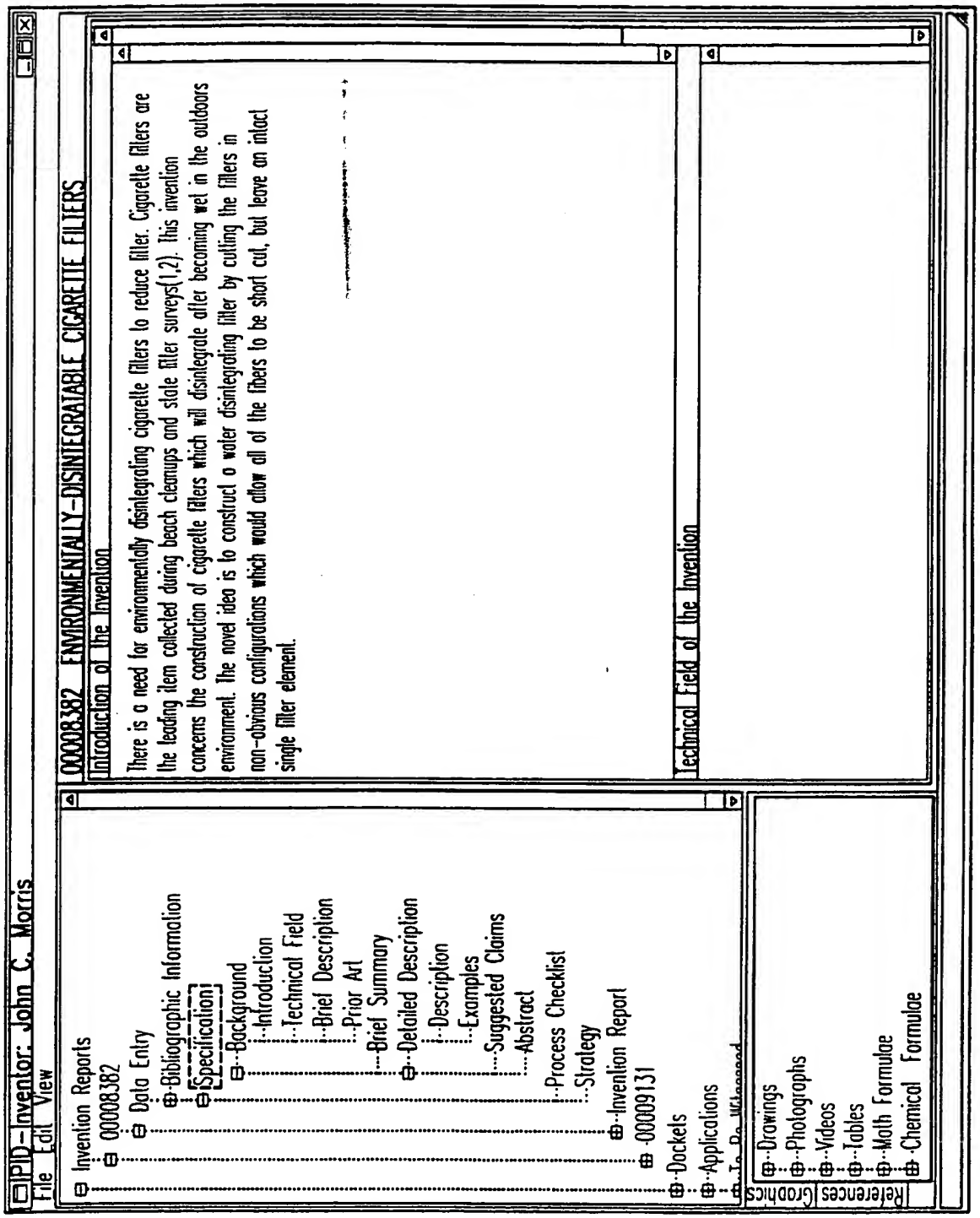
PID-Inventor: John C. Morris
File Edit View
Invention Reports
00008382
Data Entry
Bibliographic Information
Specification
Background
Introduction
Technical Field
Brief Description
Prior Art
Brief Summary
Detailed Description
Description
Examples
Suggested Claims
Abstract
Process Checklist
Strategy
Invention Report
00009131
Dockets
Applications
Graphics
Drawings
Photographs
References
Videos
Tables
Math Formulae
Chemical Formulae
00008382 ENVIRONMENTALLY-DISINTEGRATABLE CIGARETTE FILTERS
Introduction of the Invention
There is a need for environmentally disintegrating cigarette filters to reduce filter. Cigarette filters are the leading item collected during beach cleanups and state filter surveys[1,2]. This invention concerns the construction of cigarette filters which will disintegrate after becoming wet in the outdoors environment. The novel idea is to construct a water disintegrating filter by cutting the filters in non-obvious configurations which would allow all of the fibers to be short cut, but leave an intact single filter element.
Technical Field of the Invention

FIG. 12

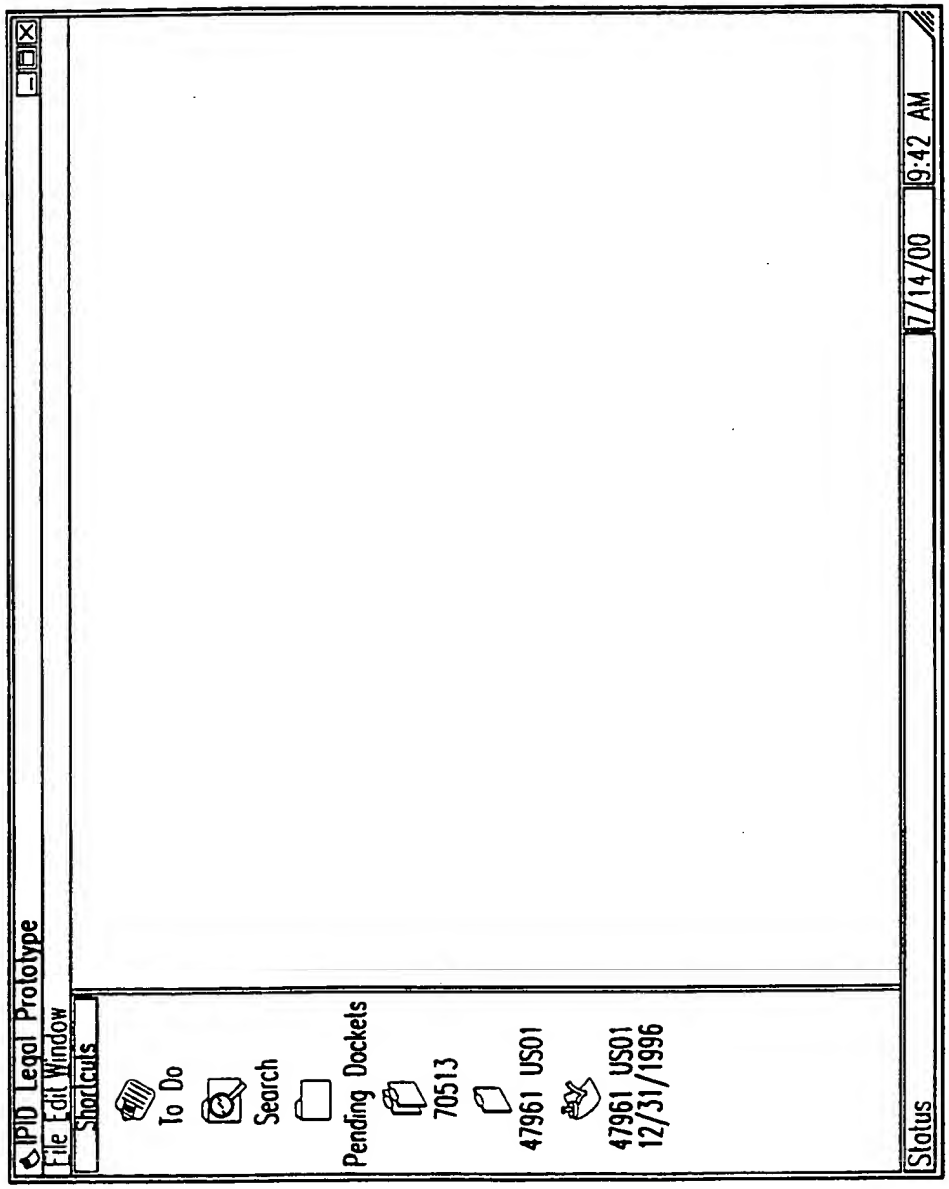
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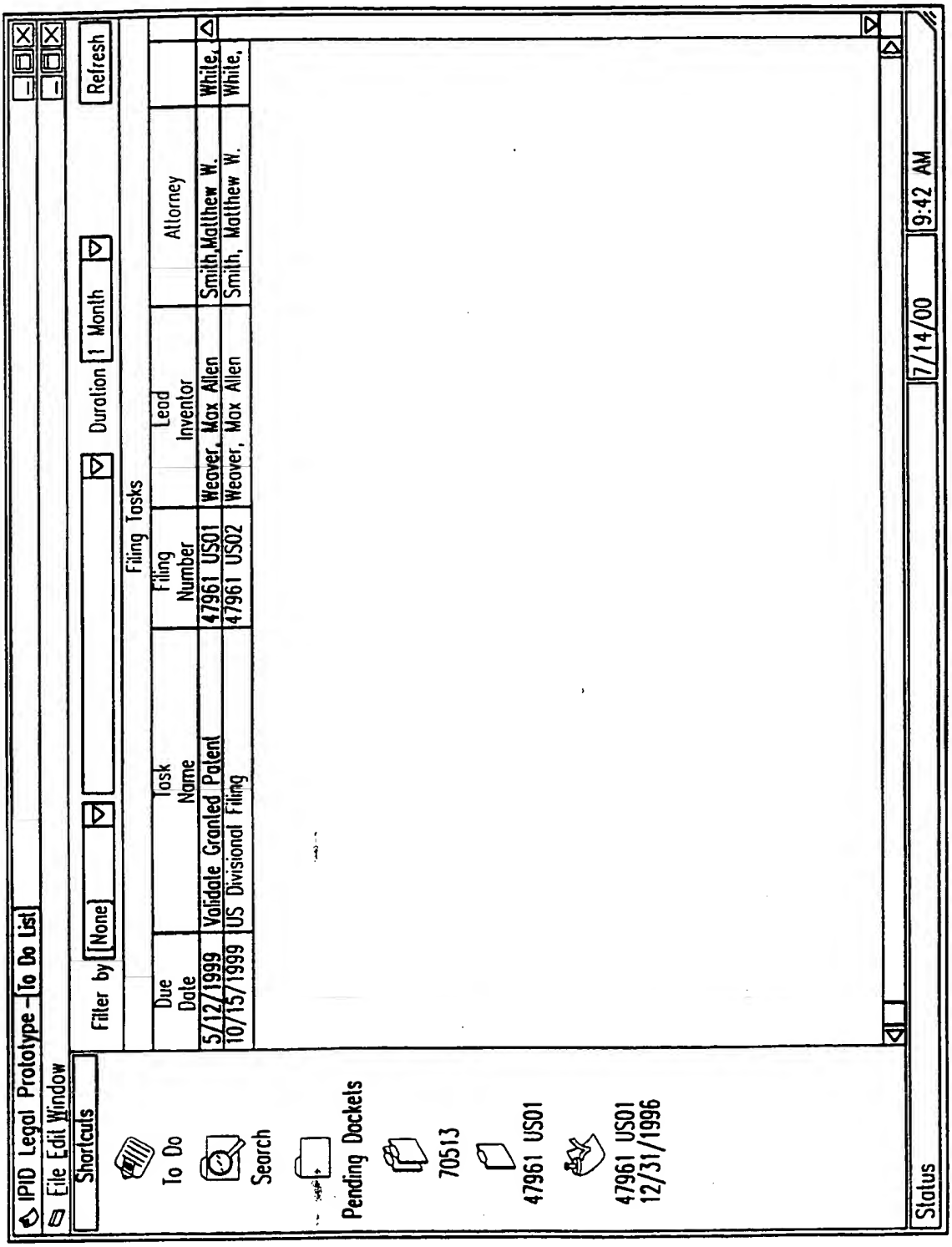
FIG. 13


IPID Legal Prototype - To Do List
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Filter by
None
Duration
1 Month
Refresh
Filing Tasks
Due Date
Task Name
Filing Number
Lead Inventor
Attorney
5/12/1999
Validate Granted Patent
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Weaver, Max Allen
Smith, Matthew W.
White,
10/15/1999
US Divisional Filing
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Weaver, Max Allen
Smith, Matthew W.
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FIG. 14

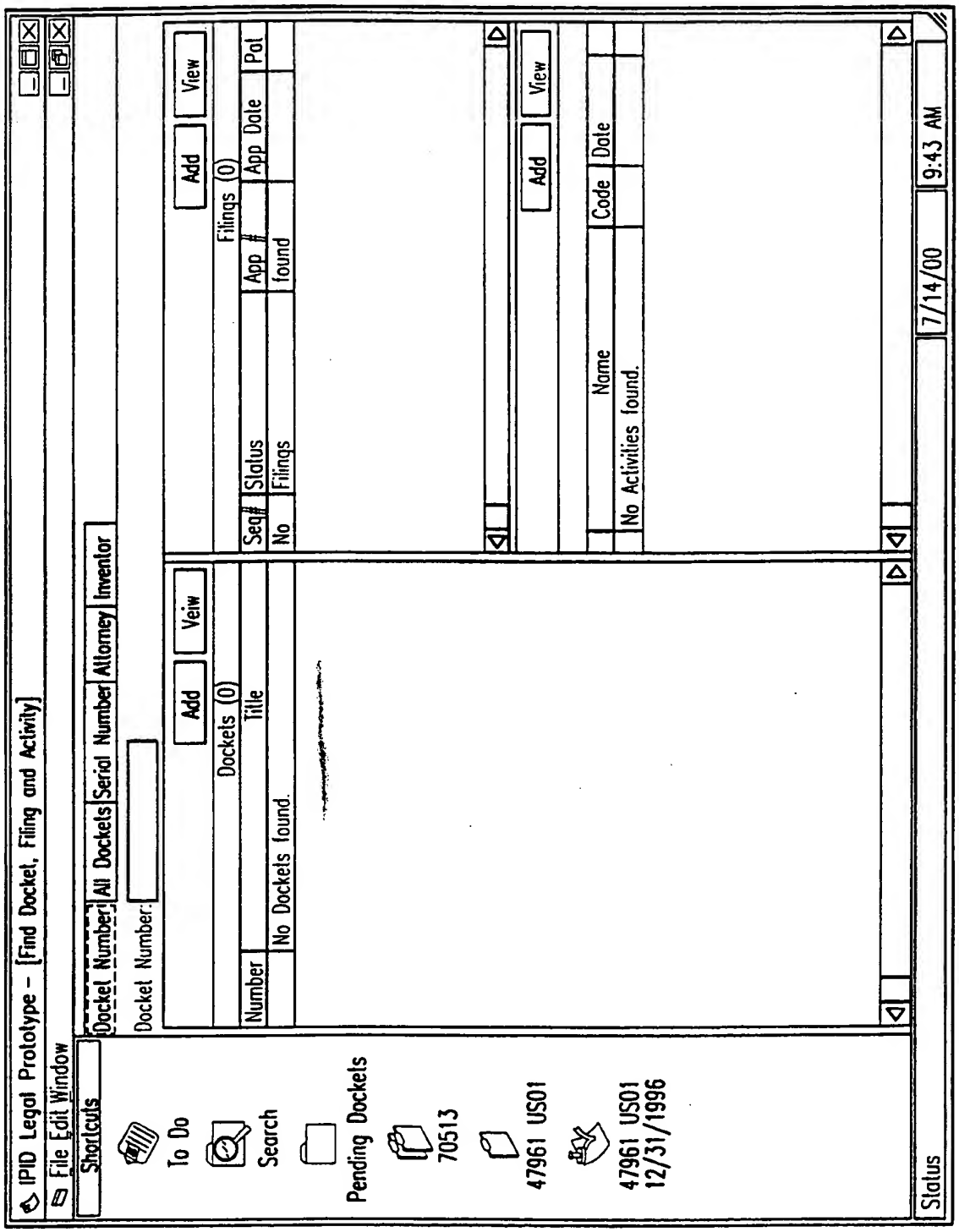
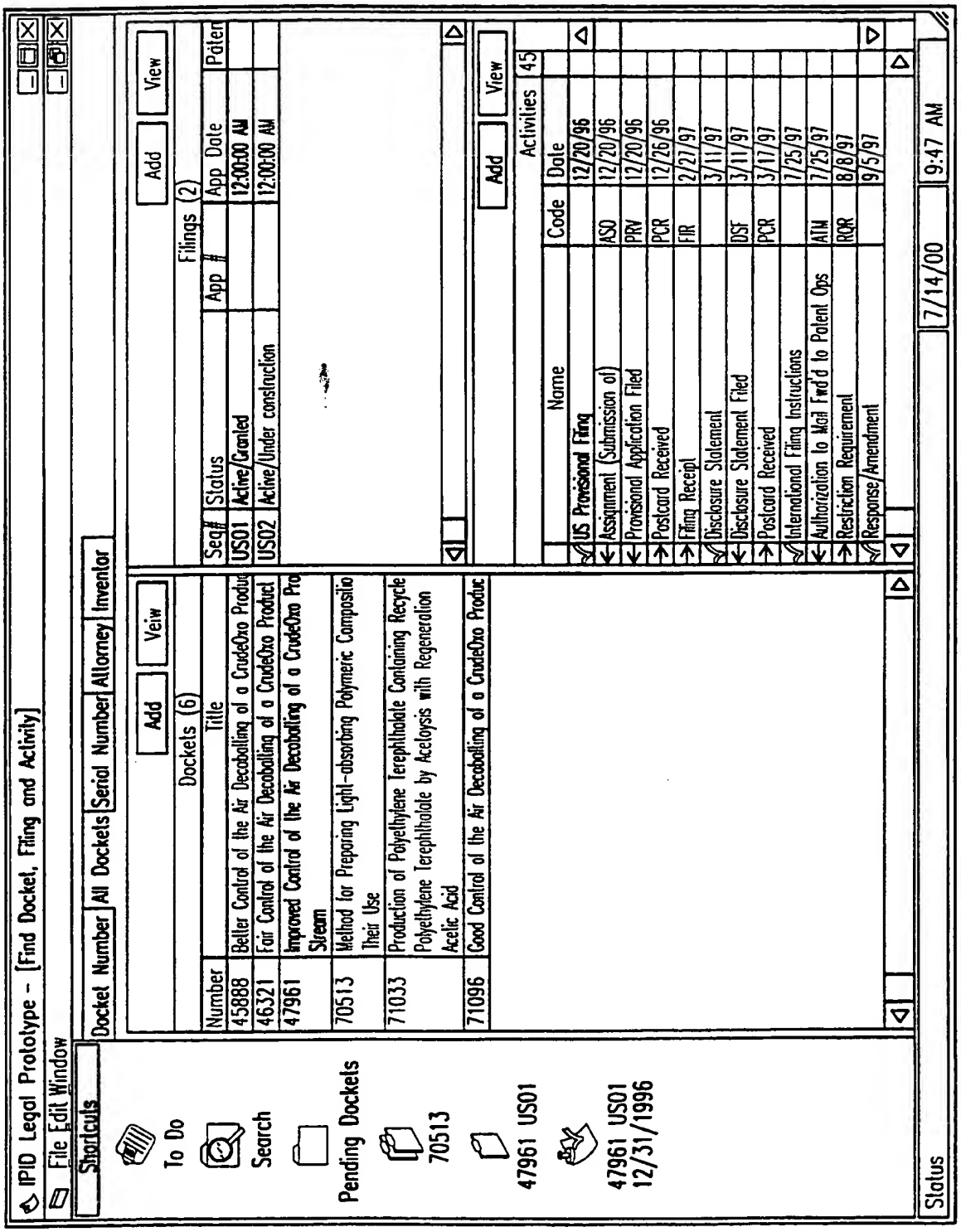


FIG. 15

4/4/05, EAST Version: 2.0.1.4


IPID Legal Prototype - [Find Docket, Filing and Activity]
File Edit Window
Shortcuts
To Do
Search
Pending Dockets
70513
47961 US01
47961 US01
12/31/1996
Docket Number
All Dockets
Serial Number
Attorney
Inventor
Add
View
Dockets (6)
Number
Title
45888
Better Control of the Air Decobalting of a CrudeOxo Produc
46321
Fair Control of the Air Decobalting of a CrudeOxo Product
47961
Improved Control of the Air Decobalting of a CrudeOxo Pro
Stream
70513
Method for Preparing Light-absorbing Polymeric Composito
Their Use
71033
Production of Polyethylene Terephthalate Containing Recycle
Polyethylene Terephthalate by Acetolysis with Regeneration
Acetic Acid
71096
Good Control of the Air Decobalting of a CrudeOxo Produc
Filings (2)
Seq #
Status
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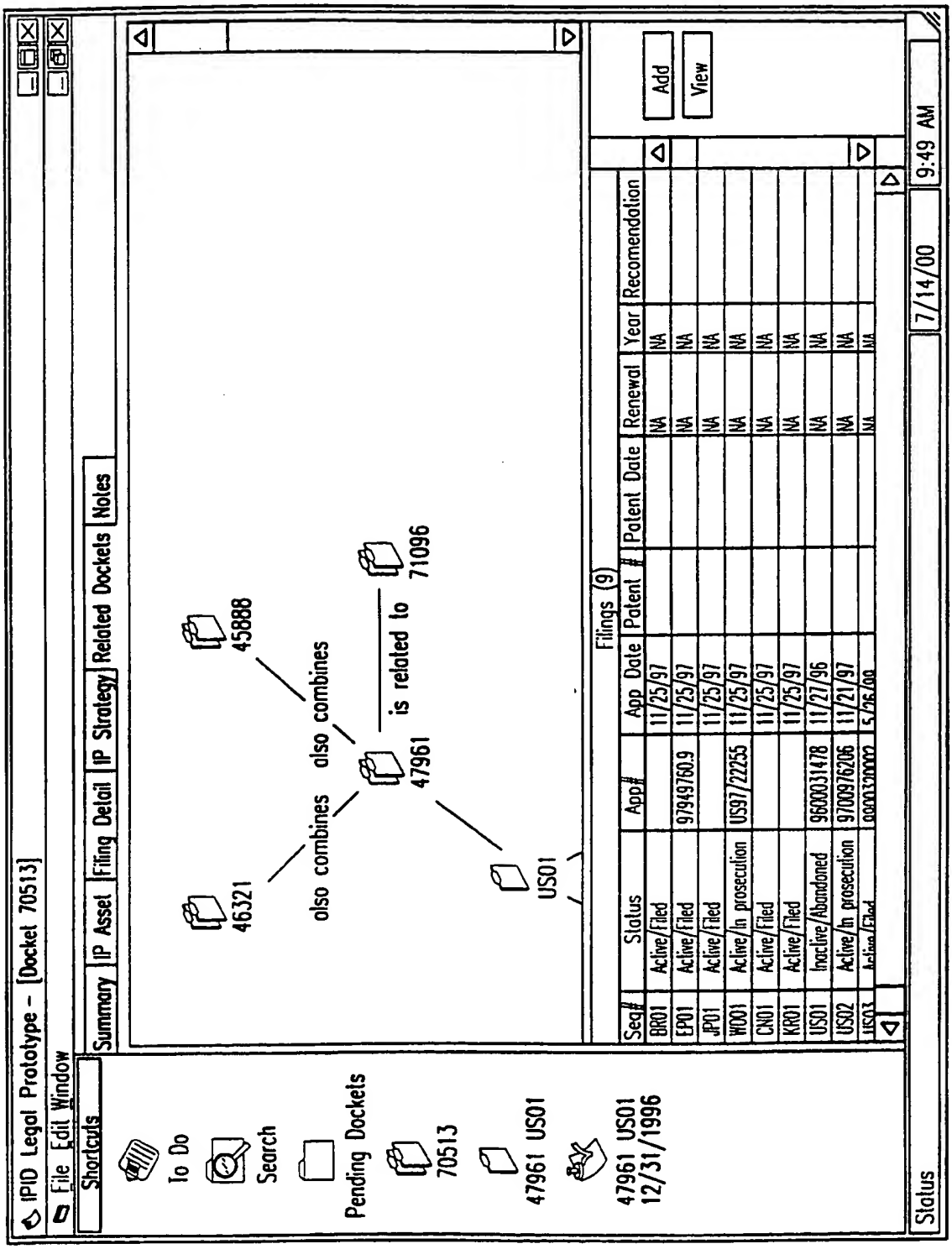
US02
Active/Under construction
12:00:00 AM
Activities 45
Name
Code
Date
US Provisional Filing
12/20/96
Assignment (Submission of)
ASD
12/20/96
Provisional Application Filed
PRV
12/20/96
Postcard Received
PCR
12/26/96
Filing Receipt
FIR
2/21/97
Disclosure Statement
3/11/97
Disclosure Statement Filed
DSF
3/11/97
Postcard Received
PCR
3/17/97
International Filing Instructions
1/25/97
Authorization to Mail Fwd'd to Patent Ops
ATM
1/25/97
Restriction Requirement
ROR
8/8/97
Response/Amendment
9/5/97
Status
7/14/00
9:47 AM

FIG. 16


IPID Legal Prototype - [Docket 70513]
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Shortcuts
To Do
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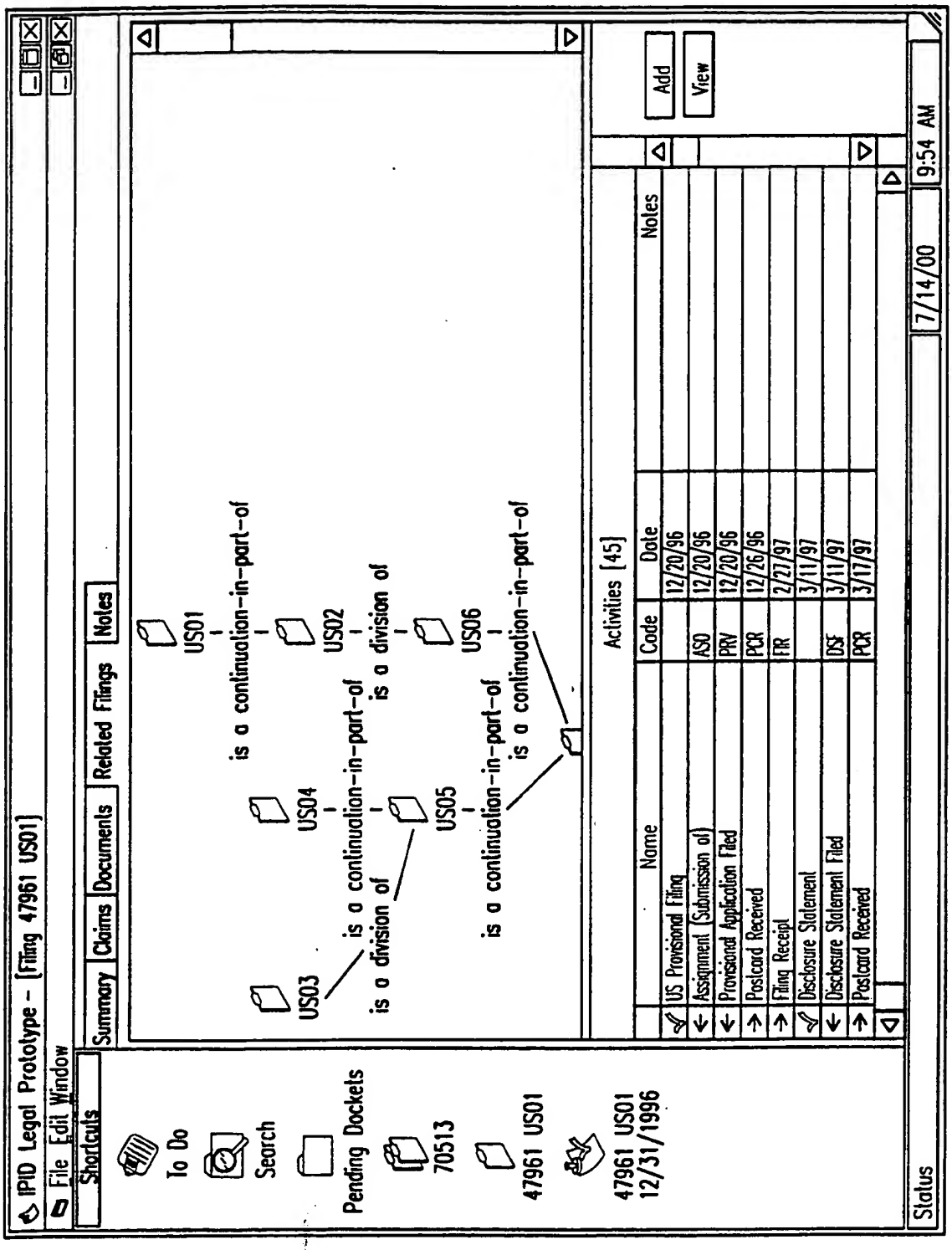
Pending Dockets
70513
47961 US01
47961 US01 12/31/1996
Summary
IP Asset
Filing Detail
IP Strategy
Related Dockets
Notes
45888
46321
also combines
also combines
47961
is related to
71096
US01
Filings (9)
Seq#
Status
App#
App Date
Patent #
Patent Date
Renewal
Year
Recomendation
BR01 Active/Filed 11/25/97 NA NA
EP01 Active/Filed 97949760.9 11/25/97 NA NA
JP01 Active/Filed 11/25/97 NA NA
WO01 Active/In prosecution US97/22255 11/25/97 NA NA
CN01 Active/Filed 11/25/97 NA NA
KR01 Active/Filed 11/25/97 NA NA
US01 Inactive/Abandoned 96080031478 11/27/96 NA NA
US02 Active/In prosecution 97009762O6 11/21/97 NA NA
US03 Active/Filed 09/573000 5/26/00 NA
Add
View
7/14/00
9:49 AM
Status

FIG. 17


IPID Legal Prototype - [Filing 47961 US01]
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Claims
Documents
Related Filings
Notes
To Do
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70513
47961 US01
47961 US01
12/31/1996
US01
US02
US03
US04
US05
US06
is a continuation-in-part-of
is a division of
Activities [45]
Name
Code
Date
Notes
US Provisional Filing
12/20/96
Assignment (Submission of)
ASO
12/20/96
Provisional Application Filed
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Filing Receipt
FTR
2/27/97
Disclosure Statement
3/11/97
Disclosure Statement Filed
DST
3/11/97
Postcard Received
PCR
3/17/97
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Status
7/14/00
9:54 AM

FIG.18